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PART VI

UNSTEADY LOW-SPEED WINDTUNNEL TEST OF A STRAKED DELTA WING, OSCILLATING IN PITCH

PART VI: PRESENTATION OF THE VISUALIZATION PROGRAM

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This technical report has been reviewed and is approved for publication.

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Results of a wind tunnel test of an oscillating straked wing. The report provides unsteady airloads and pressure distributions for a range of incidence (-8 to 50 deg.) and amplitudes (1 to 16 deg.). The wind speed was 80 meters/second, which provided reduced frequencies up to 0.50 based on root chord. The zeroth and first harmonic as well as the continuous time history of the pressure and overall loads were measured. Flow visualization was performed for flow of 30 meters/second using a pulsating laser light sheet.

In part VI results of the flow visualization investigation are presented in the appendix in the form of tables and plots of vortex core positions, both as a function of phase angle during one cycle of oscillation. Table 13a through c in part I provides a convenient cross-reference of test conditions and the table numbers in this part. The phase angles are varied in steps of 45 deg so that a time history is developed during one cycle. When it was impossible to measure vortex core positions, due to either vortex burst or (See Reverse)

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overexposure, no values are given in the tables and plots. Results are presented for the three laser light screen positions. The entries in the table for the aft position near the wing trailing edge are limited because very few core position measurements were possible due to vortex bursting.

FOREWORD

This report summarizes the results of the windtunnel test of an oscillating straked wing conducted under a cooperative program of research between General Dynamics Fort Worth Division, Fort Worth, Texas, and the National Aerospace Laboratory (NLR), The Netherlands. The model and support system was designed and fabricated at NLR under a separate program with General Dynamics and NLR funding. The test preparation, windtunnel test and reporting were performed at NLR under Air Force Contract F33615-85-C-3013, for the Flight Dynamics Laboratory of the Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base, Ohio. The work was administered by Mr. D.W. Kinsey of the Aeromechanics Division (AFWAL/FIM). Additional technical monitoring support was provided by Mr. T. Cord of the Flight Control Division (AFWAL/FIG).

The program manager and principal investigator was Dr. A.M. Cunningham Jr. at General Dynamics and Mr. R.G. den Boer was the principal investigator at NLR. Mr. den Boer was assisted by the following NLR specialists: C.S.G. Dogger, E.G.M. Geurts, A.J. Persoon, A.P. Retèl and R.J. Zwaan.

This report consists of six parts. Part I presents a general description of the model and test program and a discussion of the results. Part II contains the steady pressure distribution plots and the major part of the zeroth and first order harmonic unsteady pressure distribution plots. Part III contains the remainder of the unsteady pressure distribution plots and plots of the steady and the zeroth and first order harmonic unsteady overall loads. Part IV contains time history plots of the unsteady pressures and overall loads. Part V contains power spectral density plots of the overall loads at harmonic oscillation and time history plots of overall loads for (1-cos) model motions. Part VI contains results of the flow visualization program.

CONTENTS

LIST OF SYMBOLS

ALPHA,α	wing incidence	(deg)
b	local wing span	(m)
c	local chord	(m)
DALPHA,$d\alpha$	amplitude of unsteady wing incidence	(deg)
f,FREQ	frequency	(Hz)
PHI,φ	phase angle	(deg)
x	chordwise coordinate in wing reference plane apex: x = 0 (figures 1,5, part I)	(m)
y	spanwise coordinate in wing reference plane (figures 1,5, part I)	(m)
z	coordinate in plane of symmetry normal to wing reference plane (figures 1,5, part I)	(m)

GREEK

α,ALPHA	wing incidence	(deg)
$d\alpha$,DALPHA	amplitude of unsteady wing incidence	(deg)
φ,PHI	phase angle	(deg)

APPENDIX A

FLOW VISUALIZATION DATA TABLES AND VORTEX POSITION PLOTS

Note: In the header of the tables and figures, by x/c the position of the laser light screen relative to the root chord is indicated.

TABLE	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 9.98 deg DALPHA = 4.04 deg		FREQ = 1.13 Hz	
01	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90	-0.747	0.392	0.730	0.392		
135	-0.718	0.366	0.734	0.381		
180	-0.740	0.342	0.742	0.353		
225	-0.764	0.304	0.774	0.307		
270	-0.779	0.306	0.762	0.313		
315			0.766	0.330		

TABLE	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 9.87 deg DALPHA = 8.11 deg		FREQ = 1.13 Hz	
02	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45	-0.737	0.420	0.718	0.425		
90	-0.726	0.421	0.702	0.428		
135	-0.737	0.397	0.716	0.397		
180						
225						
270						
315						

TABLE 03	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 9.28 deg DALPHA = 16.59 deg		FREQ = 1.13 Hz			
	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0								
45	-0.697	0.504	0.680	0.504				
90	-0.665	0.499	0.648	0.499				
135	-0.690	0.428	0.713	0.428				
180								
225								
270								
315								

TABLE 04	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 10.01 deg DALPHA = 3.78 deg		FREQ = 1.88 Hz			
	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0								
45								
90			0.648	0.421				
135			0.700	0.408				
180			0.745	0.363				
225								
270	-0.769	0.292	0.772	0.307				
315			0.768	0.307				

TABLE	x/c = 40.42 % ALPHA = 9.38 deg FREQ = 1.88 Hz b/2 = 79.16 mm DALPHA = 15.51 deg							
05	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0								
45								
90	-0.687	0.553	0.663	0.559				
135	-0.701	0.461	0.692	0.476				
180								
225								
270								
315								

TABLE	x/c = 40.42 % ALPHA = 10.00 deg FREQ = 3.00 Hz b/2 = 79.16 mm DALPHA = 3.74 deg							
06	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0								
45								
90	-0.752	0.368	0.715	0.387				
135								
180								
225								
270								
315								

TABLE 07	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 9.88 deg DALPHA = 7.47 deg		FREQ = 3.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90	-0.711	0.433	0.713	0.439		
135	-0.724	0.378	0.721	0.389		
180						
225						
270						
315						

TABLE 08	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 9.42 deg DALPHA = 15.23 deg		FREQ = 3.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45	-0.705	0.525	0.715	0.534		
90	-0.675	0.549	0.683	0.555		
135	-0.696	0.410	0.701	0.420		
180						
225						
270						
315						

TABLE	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 10.00 deg DALPHA = 3.68 deg		FREQ = 6.00 Hz	
09	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90						
135						
180	-0.732	0.333	0.718	0.339		
225						
270						
315						

TABLE	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 18.92 deg DALPHA = 7.65 deg		FREQ = 1.13 Hz	
10	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90	-0.701	0.468	0.707	0.476		
135						
180						
225						
270						
315						

TABLE 11	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 18.78 deg DALPHA = 13.50 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45			0.709	0.493		
90	-0.701	0.474	0.690	0.476		
135			0.696	0.463		
180						
225						
270						
315						

TABLE 12	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 18.94 deg DALPHA = 3.58 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.711	0.411	0.721	0.416		
45	-0.710	0.450	0.711	0.452		
90	-0.719	0.454	0.691	0.454		
135	-0.707	0.443	0.705	0.446		
180	-0.709	0.428	0.721	0.437		
225	-0.716	0.402	0.723	0.404		
270	-0.738	0.381	0.721	0.386		
315	-0.710	0.405	0.719	0.405		

TABLE 13	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 18.93 deg DALPHA = 7.15 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90	-0.692	0.481	0.697	0.485		
135			0.723	0.470		
180						
225						
270						
315						

TABLE 14	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 18.79 deg DALPHA = 12.63 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45			0.700	0.550		
90	-0.707	0.512	0.686	0.516		
135	-0.692	0.476	0.697	0.490		
180						
225						
270						
315						

TABLE 15	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 22.44 deg DALPHA = 3.51 deg		FREQ = 3.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45			0.731	0.560		
90	-0.720	0.548	0.716	0.561		
135			0.706	0.518		
180						
225						
270						
315						

TABLE 16	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 22.42 deg DALPHA = 6.98 deg		FREQ = 3.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45	-0.685	0.543	0.691	0.569		
90	-0.697	0.542	0.699	0.557		
135	-0.701	0.528	0.701	0.541		
180						
225						
270						
315						

TABLE	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 22.28 deg DALPHA = 14.00 deg		FREQ = 3.00 Hz	
17	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45	-0.695	0.565	0.697	0.575		
90	-0.687	0.530	0.701	0.533		
135						
180						
225						
270						
315						

TABLE	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 22.50 deg DALPHA = 3.44 deg		FREQ = 6.00 Hz	
18	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90	-0.719	0.439	0.702	0.445		
135	-0.700	0.474	0.713	0.475		
180						
225						
270						
315						

TABLE 19	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 22.42 deg DALPHA = 6.88 deg		FREQ = 6.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90	-0.719	0.493	0.685	0.498		
135	-0.718	0.469	0.690	0.472		
180						
225						
270						
315						

TABLE 20	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 35.84 deg DALPHA = 3.73 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90						
135						
180						
225	-0.721	0.435	0.707	0.468		
270	-0.713	0.442	0.706	0.446		
315	-0.720	0.445	0.716	0.464		

TABLE 21	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 35.89 deg DALPHA = 7.48 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0			0.713	0.464		
45						
90						
135						
180						
225	-0.707	0.399	0.707	0.426		
270	-0.706	0.401	0.721	0.416		
315	-0.704	0.411	0.705	0.428		

TABLE 22	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 36.03 deg DALPHA = 15.23 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90						
135						
180						
225			0.713	0.400		
270			0.693	0.403		
315			0.699	0.409		

TABLE 23	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 35.87 deg DALPHA = 7.02 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.732	0.424	0.735	0.451		
45						
90						
135						
180			0.737	0.455		
225			0.721	0.459		
270			0.699	0.421		
315			0.713	0.424		

TABLE 24	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 36.01 deg DALPHA = 14.26 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90						
135						
180						
225						
270						
315			0.705	0.442		

TABLE 25	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 35.86 deg DALPHA = 3.44 deg		FREQ = 3 00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0			0.701	0.477		
45						
90						
135						
180						
225			0.726	0.454		
270			0.725	0.426		
315			0.726	0.464		

TABLE 26	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 35.87 deg DALPHA = 6.93 deg		FREQ = 3.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90						
135						
180						
225						
270						
315			0.713	0.490		

TABLE 27	x/c = 40.42 % b/2 = 79.16 mm		ALPHA = 35.86 deg DALPHA = 3.37 deg		FREQ = 6.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0						
45						
90						
135						
180						
225						
270			0.705	0.416		
315						

TABLE 28	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 9.98 deg DALPHA = 4.04 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0						
45					-0.793	0.077
90					-0.791	0.087
135					-0.795	0.073
180						
225						
270						
315						

	RIGHT	
PHI	2y/b	2z/b
0		
45	0.815	0.093
90	0.821	0.099
135	0.820	0.089
180		
225		
270		
315		

TABLE 29	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 9.87 deg DALPHA = 8.11 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX			WING VORTEX		
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0								
45					-0.797	0.098	0.801	0.104
90					-0.752	0.115	0.799	0.118
135					-0.791	0.090	0.807	0.097
180								
225								
270								
315								

TABLE 30	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 9.28 deg DALPHA = 16.59 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX			WING VORTEX		
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0								
45					-0.790	0.129	0.802	0.144
90								
135								
180								
225								
270								
315								

TABLE 31	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 10.01 deg DALPHA = 3.78 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45					-0.805 0.077	0.799 0.087
90					-0.804 0.083	0.804 0.094
135					-0.801 0.073	0.804 0.085
180						
225						
270						
315						

TABLE 32	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 9.91 deg DALPHA = 7.60 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45					-0.793 0.087	0.796 0.097
90					-0.786 0.097	0.792 0.106
135					-0.797 0.084	0.804 0.092
180						
225						
270						
315						

TABLE 33	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 9.38 deg DALPHA = 15.51 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX			WING VORTEX		
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0								
45					-0.776	0.128	0.776	0.135
90					-0.783	0.142	0.772	0.150
135					-0.793	0.115	0.796	0.124
180								
225								
270								
315								

TABLE 34	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 10.00 deg DALPHA = 3.74 deg		FREQ = 3.00 Hz	
	STRAKE VORTEX			WING VORTEX		
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0								
45					-0.799	0.071	0.808	0.087
90					-0.801	0.076	0.804	0.088
135					-0.801	0.074	0.803	0.085
180								
225								
270								
315								

TABLE	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 9.88 deg DALPHA = 7.47 deg		FREQ = 3.00 Hz			
35	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.464	0.119	0.474	0.123				
45					-0.795	0.063	0.792	0.076
90	-0.466	0.172	0.437	0.178	-0.798	0.074	0.783	0.085
135	-0.454	0.167	0.440	0.170	-0.806	0.058	0.799	0.068
180	-0.449	0.131	0.440	0.136				
225	-0.453	0.084	0.453	0.094				
270								
315								

TABLE	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 9.42 deg DALPHA = 15.23 deg		FREQ = 3.00 Hz			
36	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.458	0.134	0.468	0.140				
45	-0.446	0.206	0.450	0.206	-0.768	0.111	0.782	0.116
90	-0.413	0.241	0.439	0.241	-0.775	0.120	0.781	0.136
135	-0.422	0.217	0.428	0.217	-0.799	0.085	0.796	0.095
180								
225								
270								
315								

TABLE	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 10.00 deg DALPHA = 3.68 deg		FREQ = 6.00	
37	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0						
45					-0.813	0.052
90					-0.792	0.057
135	-0.436	0.155	0.456	0.155	-0.800	0.050
180	-0.442	0.143	0.448	0.148	-0.814	0.039
225						
270						
315	-0.452	0.100	0.471	0.102		

TABLE	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 9.88 deg DALPHA = 7.36 deg		FREQ = 6.00 Hz	
38	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.452	0.117	0.477	0.117		
45	-0.464	0.142	0.482	0.151	-0.791	0.062
90	-0.442	0.169	0.458	0.177	-0.778	0.077
135	-0.436	0.178	0.448	0.184	-0.797	0.063
180	-0.428	0.149	0.446	0.157	-0.819	0.038
225						
270						
315						

TABLE 39	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.96 deg DALPHA = 3.82 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.448	0.203	0.467	0.210	-0.795 0.103	0.816 0.106
45	-0.442	0.221	0.463	0.226	-0.797 0.116	0.816 0.123
90	-0.435	0.225	0.454	0.230	-0.788 0.124	0.824 0.127
135	-0.442	0.215	0.455	0.223		
180	-0.448	0.210	0.469	0.212	-0.807 0.101	0.799 0.109
225	-0.452	0.229	0.466	0.231	-0.788 0.124	0.821 0.129
270	-0.447	0.188	0.464	0.193	-0.798 0.087	0.812 0.103
315	-0.454	0.195	0.462	0.200	-0.802 0.097	0.814 0.107

TABLE 40	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.92 deg DALPHA = 7.65 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.449	0.205	0.470	0.212	-0.779 0.102	0.813 0.117
45	-0.437	0.231	0.457	0.242		
90	-0.429	0.243	0.450	0.251		
135	-0.434	0.234	0.450	0.243		
180	-0.446	0.204	0.457	0.213		
225	-0.442	0.181	0.465	0.185		
270	-0.467	0.167	0.467	0.172		
315	-0.446	0.182	0.465	0.189		

TABLE 41	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.78 deg DALPHA = 13.50 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.452	0.208	0.468	0.213	-0.787 0.117	0.810 0.132
45	-0.428	0.245	0.450	0.261		
90			0.438	0.300		
135			0.450	0.263		
180	-0.441	0.209	0.460	0.214	-0.797 0.092	0.825 0.107
225	-0.445	0.160	0.461	0.165		
270	-0.448	0.117	0.467	0.125		
315	-0.452	0.157	0.469	0.163		

TABLE 42	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.94 deg DALPHA = 3.58 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.457	0.194	0.456	0.200		
45	-0.456	0.205	0.453	0.214		
90	-0.448	0.214	0.453	0.222		
135	-0.449	0.213	0.453	0.218		
180	-0.455	0.204	0.452	0.212		
225	-0.457	0.185	0.453	0.193		
270	-0.457	0.179	0.457	0.188		
315	-0.455	0.182	0.459	0.194		

TABLE 43	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.93 deg DALPHA = 7.15 deg		FREQ = 1.88 Hz			
	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.456	0.199	0.463	0.206	-0.797	0.107	0.804	0.116
45	-0.440	0.225	0.455	0.235	-0.795	0.123	0.803	0.140
90	-0.432	0.241	0.440	0.250				
135	-0.429	0.233	0.448	0.239				
180	-0.438	0.208	0.459	0.214				
225	-0.445	0.179	0.461	0.190	-0.801	0.080	0.818	0.092
270	-0.444	0.161	0.464	0.170				
315	-0.444	0.169	0.459	0.180	-0.799	0.079	0.815	0.096

TABLE 44	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.79 deg DALPHA = 12.63 deg		FREQ = 1.88 Hz			
	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.448	0.205	0.472	0.213	-0.790	0.114	0.801	0.134
45	-0.433	0.253	0.444	0.263	-0.786	0.164	0.790	0.164
90			0.448	0.295				
135			0.457	0.284				
180	-0.433	0.219	0.452	0.227				
225	-0.437	0.169	0.456	0.178				
270	-0.447	0.127	0.464	0.138				
315	-0.457	0.150	0.473	0.161				

TABLE 45	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.97 deg DALPHA = 3.54 deg		FREQ = 3.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.459	0.218	0.460	0.227	-0.800 0.116	0.801 0.126
45	-0.448	0.229	0.459	0.236	-0.805 0.123	0.804 0.130
90	-0.444	0.230	0.451	0.240	-0.803 0.123	0.807 0.130
135	-0.438	0.222	0.461	0.228	-0.793 0.109	0.811 0.122
180	-0.453	0.210	0.456	0.215	-0.802 0.109	0.808 0.118
225	-0.453	0.202	0.457	0.205	-0.805 0.099	0.816 0.108
270	-0.451	0.188	0.463	0.197	-0.803 0.094	0.816 0.104
315	-0.454	0.198	0.460	0.206	-0.802 0.104	0.808 0.115

TABLE 46	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.92 deg DALPHA = 7.07 deg		FREQ = 3.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.452	0.218	0.463	0.225	-0.797 0.122	0.804 0.131
45	-0.440	0.241	0.458	0.250	-0.782 0.140	0.805 0.151
90	-0.432	0.246	0.462	0.251	-0.782 0.144	
135	-0.435	0.231	0.458	0.237	-0.796 0.122	0.826 0.132
180	-0.435	0.205	0.465	0.211	-0.803 0.100	
225	-0.447	0.176	0.464	0.181		
270	-0.440	0.173	0.460	0.179		
315	-0.442	0.189	0.454	0.198		

TABLE 47	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.83 deg DALPHA = 12.42 deg		FREQ = 3.00 Hz			
	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.444	0.225	0.476	0.235	-0.773	0.138	0.806	0.143
45	-0.439	0.268	0.459	0.270	-0.773	0.178		
90			0.436	0.297	-0.792	0.151		
135			0.450	0.294				
180	-0.425	0.200	0.458	0.208				
225	-0.435	0.156	0.472	0.162				
270								
315	-0.460	0.172	0.485	0.180	-0.802	0.085	0.820	

TABLE 48	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.98 deg DALPHA = 3.46 deg		FREQ = 6.00 Hz			
	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.447	0.192	0.473	0.202	-0.784	0.103	0.807	0.114
45	-0.444	0.211	0.476	0.218	-0.784	0.116	0.805	0.124
90	-0.446	0.227	0.456	0.232	-0.798	0.119	0.803	0.122
135	-0.446	0.229	0.448	0.239	-0.805	0.121	0.810	0.124
180	-0.446	0.225	0.446	0.234	-0.801	0.112	0.812	0.122
225	-0.444	0.213	0.458	0.216	-0.803	0.094	0.820	0.108
270	-0.443	0.198	0.470	0.204	-0.802	0.097	0.818	0.105
315	-0.445	0.188	0.472	0.197	-0.799	0.089	0.824	0.111

TABLE 49	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 18.93 deg DALPHA = 6.93 deg		FREQ = 6.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0					-0.782 0.082	0.794 0.092
45					-0.782 0.115	0.793 0.127
90	-0.438	0.250	0.437	0.259	-0.775 0.153	0.805 0.154
135	-0.442	0.251	0.442	0.258	-0.792 0.144	0.814 0.152
180	-0.442	0.229	0.442	0.238		
225	-0.444	0.206	0.443	0.212	-0.813 0.077	0.820 0.085
270	-0.453	0.180			-0.812 0.061	0.824 0.071
315					-0.790 0.062	0.831 0.067

TABLE 50	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.45 deg DALPHA = 3.79 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.444	0.234	0.463	0.244	-0.789 0.132	0.814 0.145
45	-0.443	0.246	0.460	0.251	-0.789 0.148	0.798 0.168
90	-0.439	0.248	0.458	0.254	-0.787 0.157	0.790 0.167
135	-0.439	0.237	0.456	0.242	-0.792 0.141	0.790 0.149
180	-0.441	0.229	0.462	0.239	-0.799 0.123	0.814 0.131
225	-0.446	0.222	0.464	0.230	-0.790 0.115	0.822 0.126
270	-0.444	0.216	0.467	0.222	-0.790 0.112	0.818 0.120
315	-0.444	0.223	0.471	0.229	-0.791 0.116	0.821 0.126

TABLE	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.41 deg DALPHA = 7.57 deg		FREQ = 1.13 Hz	
51	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.445	0.224	0.468	0.230	-0.792	0.117
45	-0.441	0.247	0.464	0.254	-0.766	0.172
90			0.443	0.271	-0.803	0.157
135			0.452	0.259	-0.795	0.136
180	-0.438	0.225	0.463	0.232	-0.787	0.125
225	-0.446	0.203	0.467	0.210	-0.799	0.102
270	-0.446	0.191	0.468	0.194	-0.793	0.090
315	-0.452	0.198	0.470	0.204	-0.796	0.107

TABLE	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.49 deg DALPHA = 15.19 deg		FREQ = 1.13 Hz	
52	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0					-0.789	0.128
45						
90						
135						
180	-0.436	0.219	0.460	0.227	-0.792	0.110
225	-0.444	0.172	0.468	0.175		
270	-0.444	0.137	0.468	0.138		
315	-0.447	0.174	0.474	0.175		

TABLE 53	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.46 deg DALPHA = 3.54 deg		FREQ = 1.8σ Hz			
	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.440	0.222	0.464	0.227	-0.793	0.116	0.817	0.128
45	-0.438	0.228	0.457	0.239	-0.784	0.135		
90	-0.439	0.235	0.458	0.244	-0.781	0.152		
135	-0.440	0.232	0.452	0.239	-0.791	0.132		
180	-0.438	0.223	0.455	0.228	-0.795	0.116		
225	-0.438	0.209	0.464	0.219	-0.789	0.103	0.827	0.116
270	-0.438	0.202	0.478	0.209	-0.791	0.099	0.827	0.109
315	-0.439	0.206	0.475	0.215	-0.791	0.103	0.838	0.115

TABLE 54	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.42 deg DALPHA = 7.09 deg		FREQ = 1.88 Hz			
	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.440	0.217	0.477	0.226	-0.787	0.117	0.825	0.122
45	-0.435	0.243	0.466	0.250				
90	-0.429	0.268	0.456	0.272				
135			0.457	0.256				
180	-0.423	0.224	0.464	0.232				
225	-0.437	0.197	0.466	0.207	-0.795	0.089	0.829	0.105
270	-0.440	0.184	0.474	0.193	-0.792	0.086	0.829	0.099
315	-0.444	0.192	0.477	0.198	-0.791	0.101	0.831	0.113

TABLE	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.29 deg DALPHA = 14.24 deg		FREQ = 1.88 Hz			
55	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.449	0.222	0.470	0.228	-0.783	0.136	0.812	0.143
45	-0.432	0.282	0.456	0.287				
90								
135								
180	-0.425	0.240	0.464	0.247				
225	-0.435	0.182	0.470	0.189				
270								
315								

TABLE	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.44 deg DALPHA = 3.51 deg		FREQ = 3.00 Hz			
56	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.455	0.205	0.455	0.217	-0.805	0.115	0.797	0.117
45	-0.449	0.218	0.449	0.230	-0.798	0.120		
90	-0.446	0.223	0.446	0.230	-0.789	0.132		
135	-0.447	0.218	0.447	0.229	-0.785	0.118		
180	-0.445	0.215	0.445	0.227	-0.813	0.108		
225	-0.449	0.203	0.449	0.214	-0.811	0.094	0.807	0.108
270	-0.457	0.191	0.457	0.202	-0.812	0.092	0.808	0.099
315	-0.460	0.194	0.460	0.204	-0.812	0.094	0.806	0.107

TABLE	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.42 deg DALPHA = 6.98 deg		FREQ = 3.00 Hz			
57	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.458	0.197	0.458	0.207	-0.800	0.105	0.804	0.115
45	-0.447	0.225	0.447	0.232	-0.794	0.142		
90	-0.446	0.247	0.446	0.252	-0.800	0.157		
135			0.449	0.244				
180	-0.442	0.219	0.442	0.226	-0.804	0.112		
225	-0.451	0.188	0.451	0.194	-0.808	0.086	0.816	0.093
270	-0.458	0.165	0.458	0.169	-0.810	0.070	0.809	0.079
315	-0.463	0.170	0.463	0.178	-0.806	0.088	0.804	0.094

TABLE	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.28 deg DALPHA = 14.00 deg		FREQ = 3.00 Hz			
58	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0	-0.441	0.207	0.485	0.211	-0.772	0.130	0.804	0.132
45	-0.425	0.272	0.454	0.277				
90								
135								
180								
225	-0.426	0.165	0.473	0.170	-0.791	0.061		
270								
315								

TABLE 59	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.50 deg DALPHA = 3.44 deg		FREQ = 6.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.461	0.210	0.461	0.218	-0.802 0.115	0.806 0.118
45	-0.452	0.221	0.452	0.232	-0.803 0.137	
90	-0.450	0.229	0.450	0.239		
135	-0.450	0.228	0.450	0.238		
180	-0.446	0.222	0.446	0.232		
225	-0.447	0.208	0.447	0.221	-0.808 0.108	
270	-0.454	0.198	0.454	0.211	-0.815 0.105	
315	-0.460	0.200	0.460	0.208	-0.812 0.109	0.809 0.116

TABLE 60	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 22.42 deg DALPHA = 6.88 deg		FREQ = 6.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.469	0.195	0.469	0.205	-0.798 0.128	0.790 0.133
45	-0.457	0.227	0.457	0.235	-0.797 0.150	
90	-0.449	0.251	0.449	0.259		
135	-0.449	0.269	0.449	0.269		
180	-0.448	0.239	0.448	0.250		
225	-0.446	0.210	0.446	0.221		
270	-0.456	0.189	0.456	0.197	-0.824 0.085	
315	-0.466	0.179	0.466	0.188	-0.812 0.104	0.811 0.113

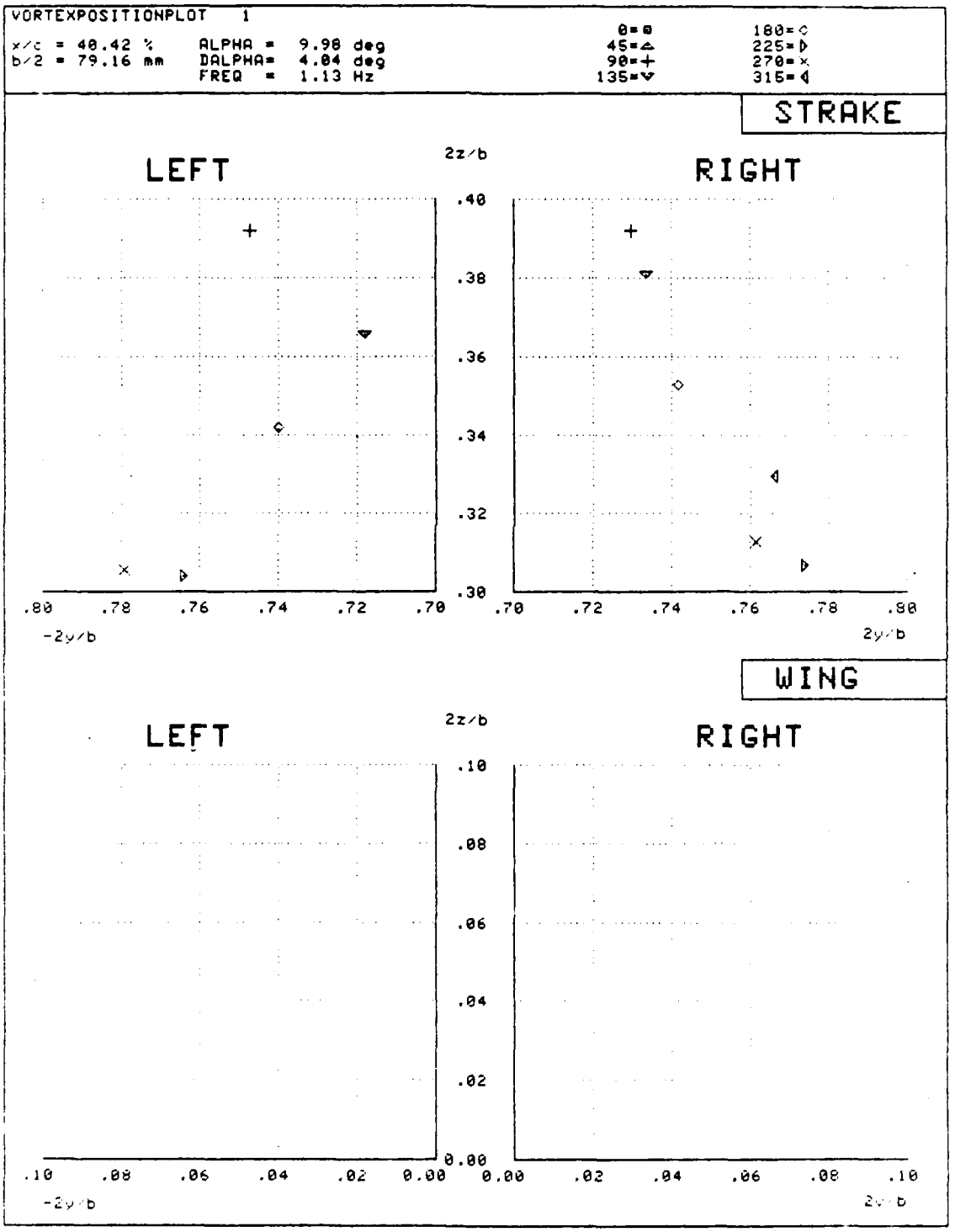
TABLE 61	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 36.03 deg DALPHA = 15.23 deg		FREQ = 1.13 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90						
135						
180						
225						
270	-0.462	0.230	0.456	0.243		
315						

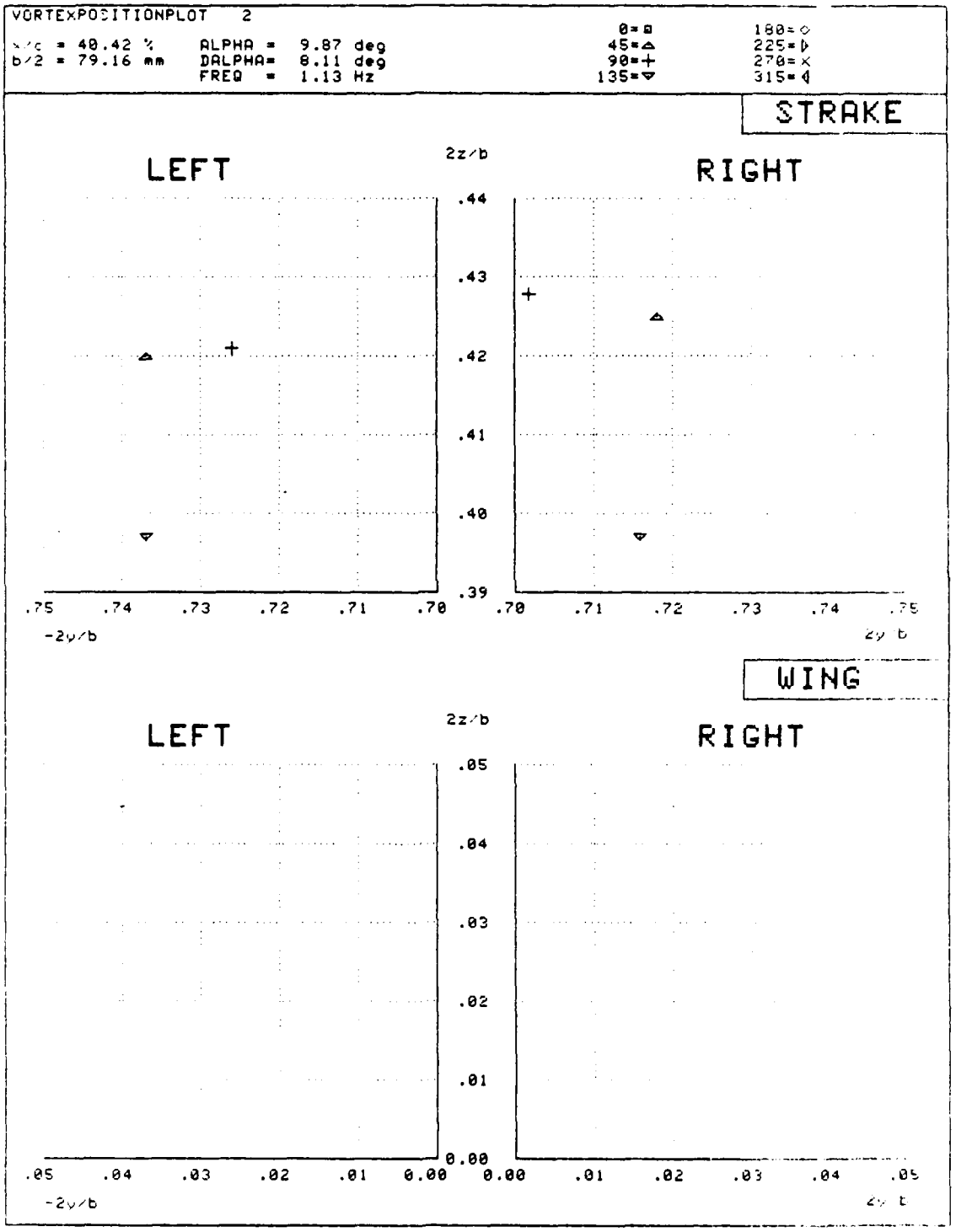
TABLE 62	x/c = 65.88 % b/2 = 225.00 mm		ALPHA = 36.02 deg DALPHA = 14.03 deg		FREQ = 3.00 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90						
135						
180						
225						
270	-0.450	0.230	0.446	0.238		
315	-0.463	0.217	0.459	0.235		

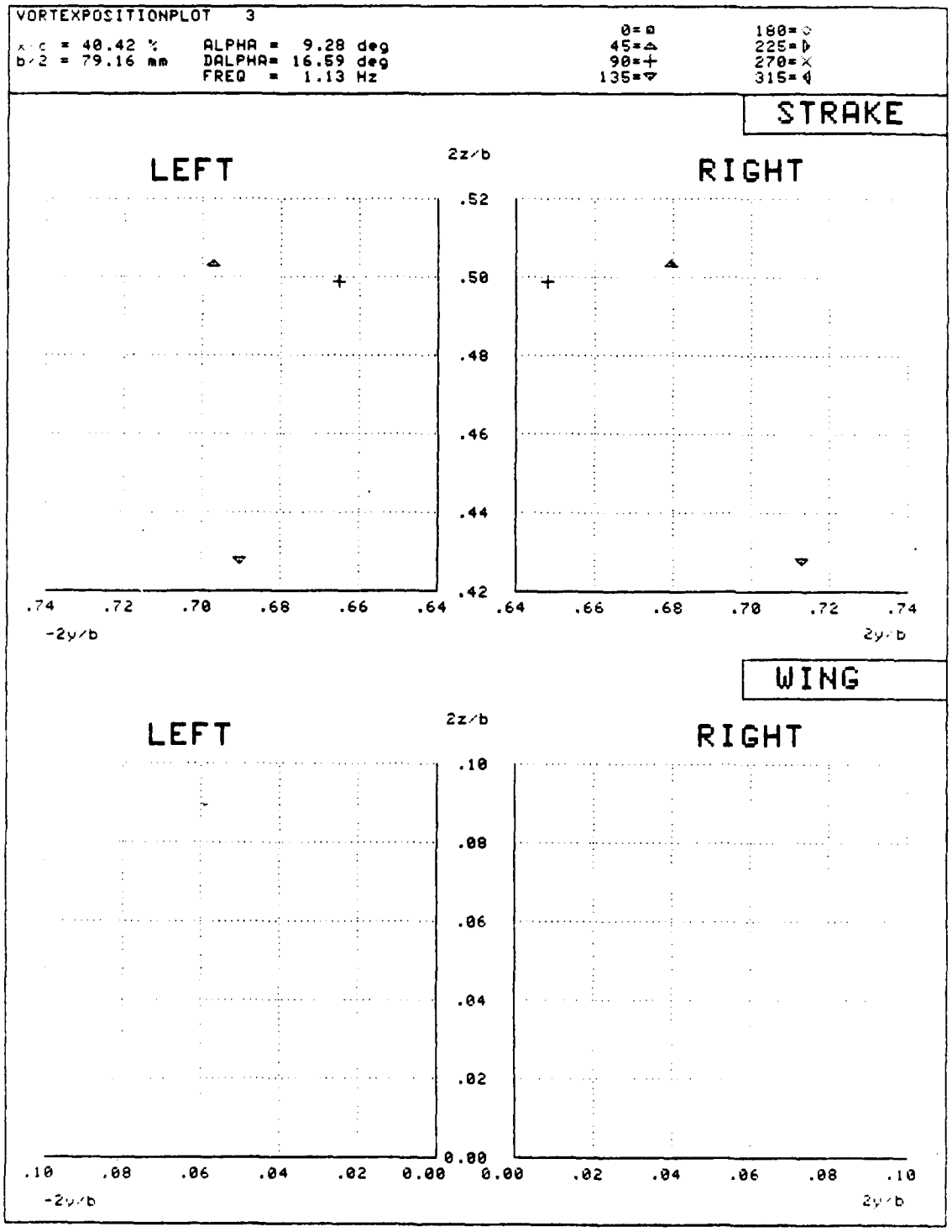
TABLE 63	x/c = 96.82 % b/2 = 400.00 mm		ALPHA = 10.01 deg DALPHA = 3.78 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0						
45						
90						
135	-0.351	0.117	0.362	0.119		
180						
225						
270						
315						

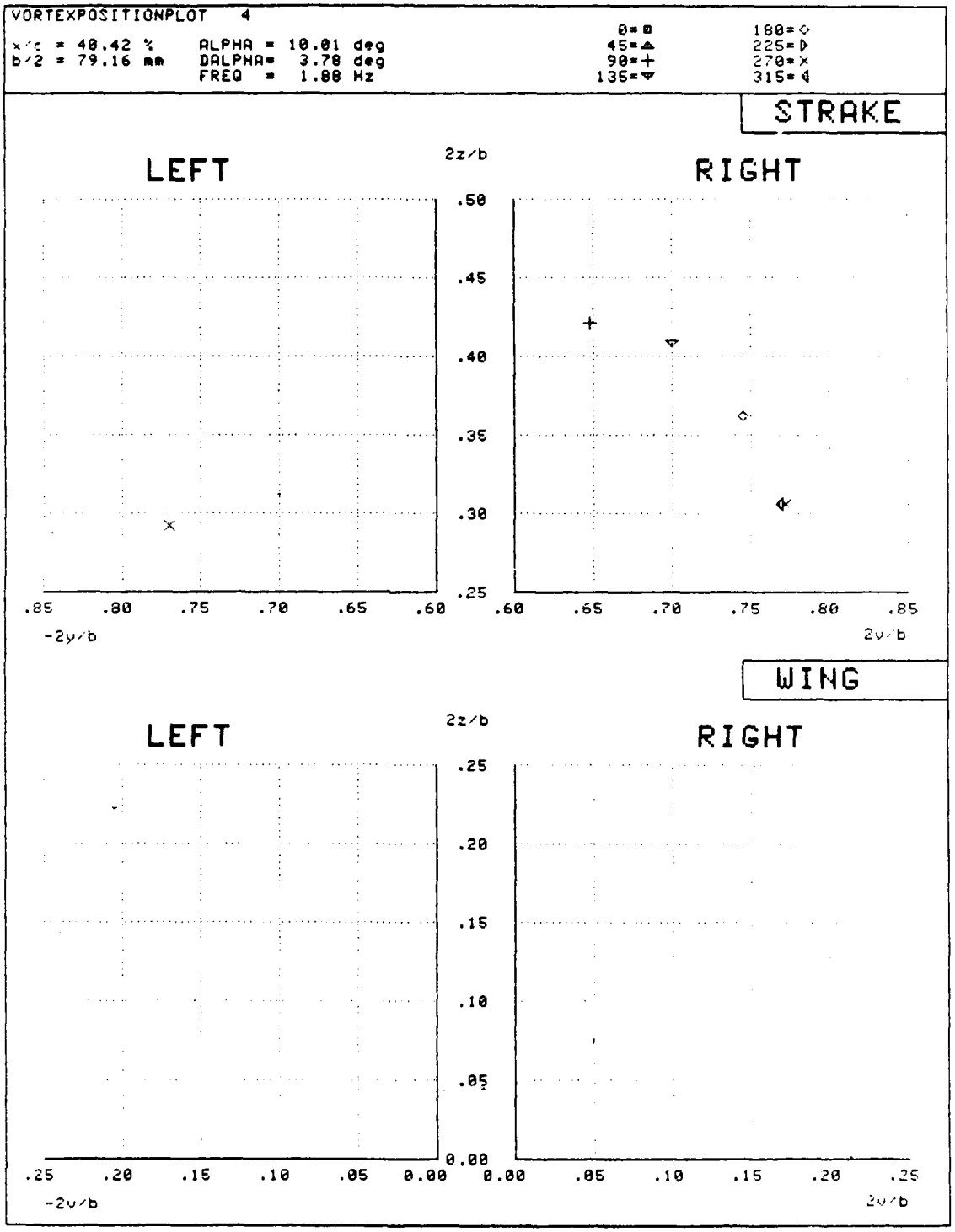
TABLE 64	x/c = 96.82 % b/2 = 400.00 mm		ALPHA = 9.91 deg DALPHA = 7.60 deg		FREQ = 1.88 Hz	
	STRAKE VORTEX				WING VORTEX	
	LEFT		RIGHT		LEFT	RIGHT
PHI	2y/b	2z/b	2y/b	2z/b	2y/b 2z/b	2y/b 2z/b
0	-0.320	0.082	0.336	0.085		
45						
90	-0.469	0.073	0.481	0.077		
135	-0.413	0.102	0.424	0.104		
180	-0.327	0.112	0.344	0.115		
225						
270						
315						

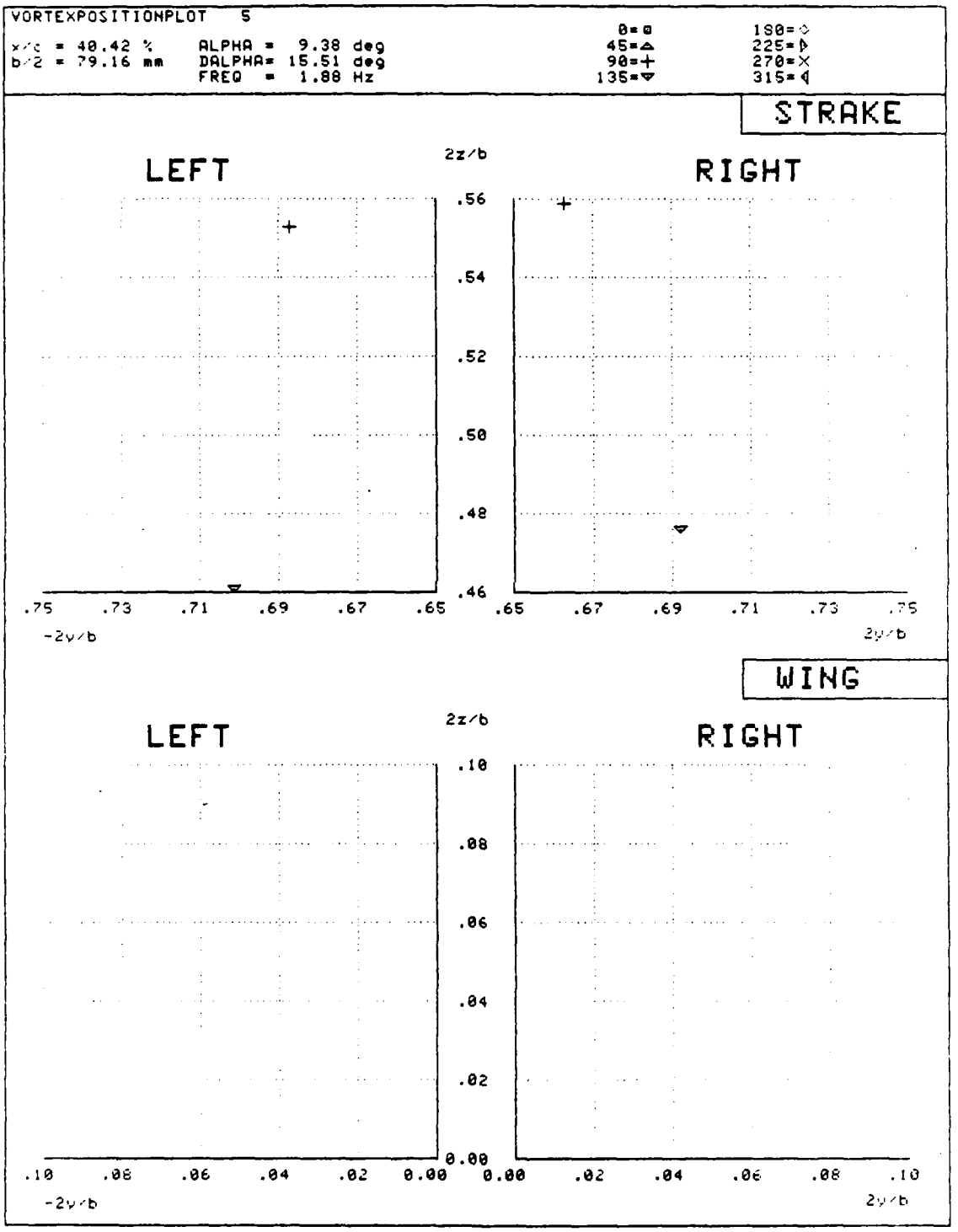
TABLE	x/c = 96.82 % ALPHA = 9.88 deg FREQ = 6.00 Hz b/2 = 400.00 mm DALPHA = 7.36 deg							
65	STRAKE VORTEX				WING VORTEX			
	LEFT		RIGHT		LEFT		RIGHT	
PHI	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b	2y/b	2z/b
0								
45								
90								
135								
180	-0.360	0.127	0.360	0.129				
225								
270								
315								

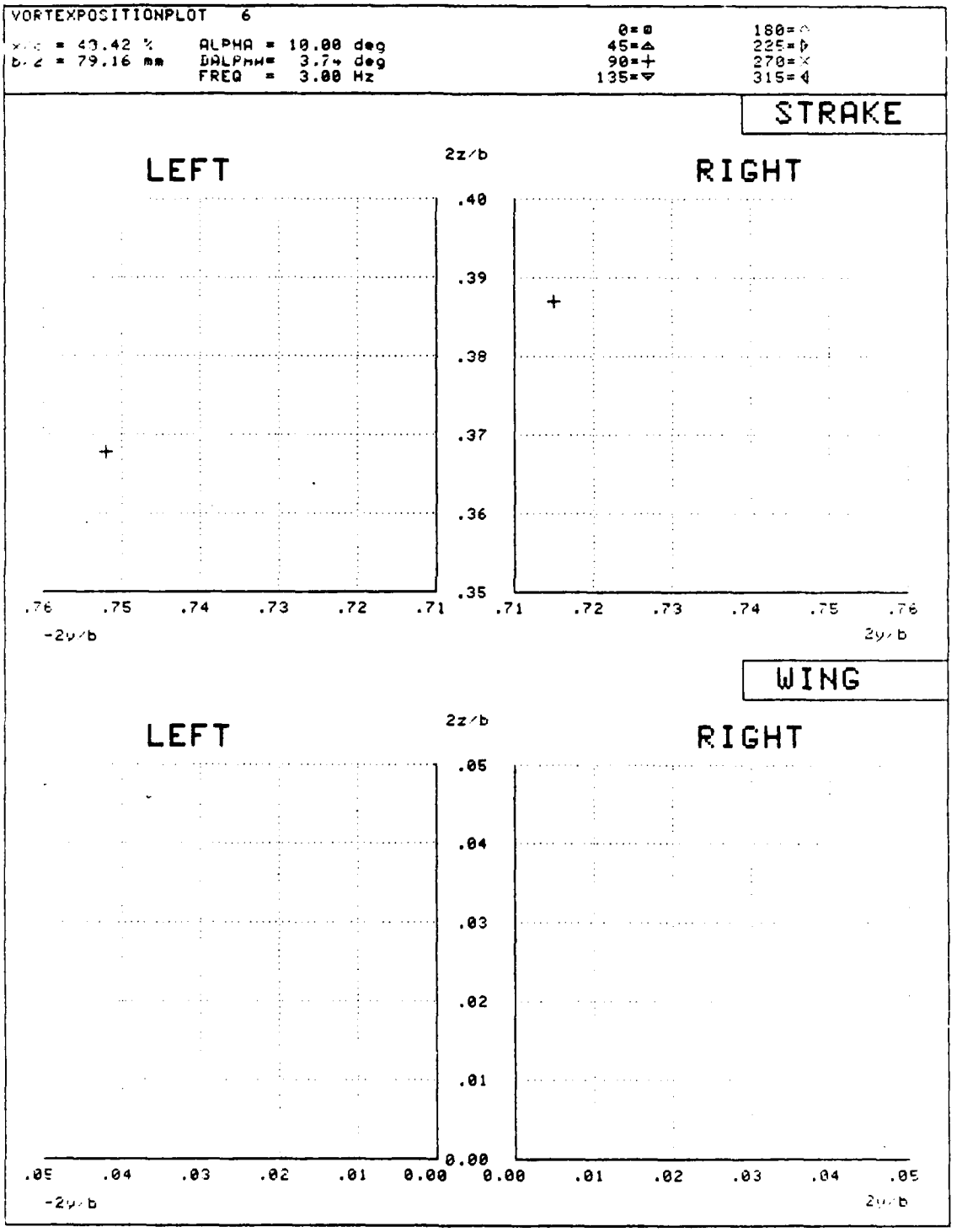

VORTEXPOSITIONPLOT 1
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 9.98 deg
DALPHA= 4.04 deg
FREQ = 1.13 Hz
0=■ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
2z/b
RIGHT
.40
.38
.36
.34
.32
.30
.80 .78 .76 .74 .72 .70
-2y/b
.70 .72 .74 .76 .78 .80
2y/b
WING
LEFT
2z/b
RIGHT
.10
.08
.06
.04
.02
0.00
.10 .08 .06 .04 .02 0.00
-2y/b
0.00 .02 .04 .06 .08 .10
2y/b

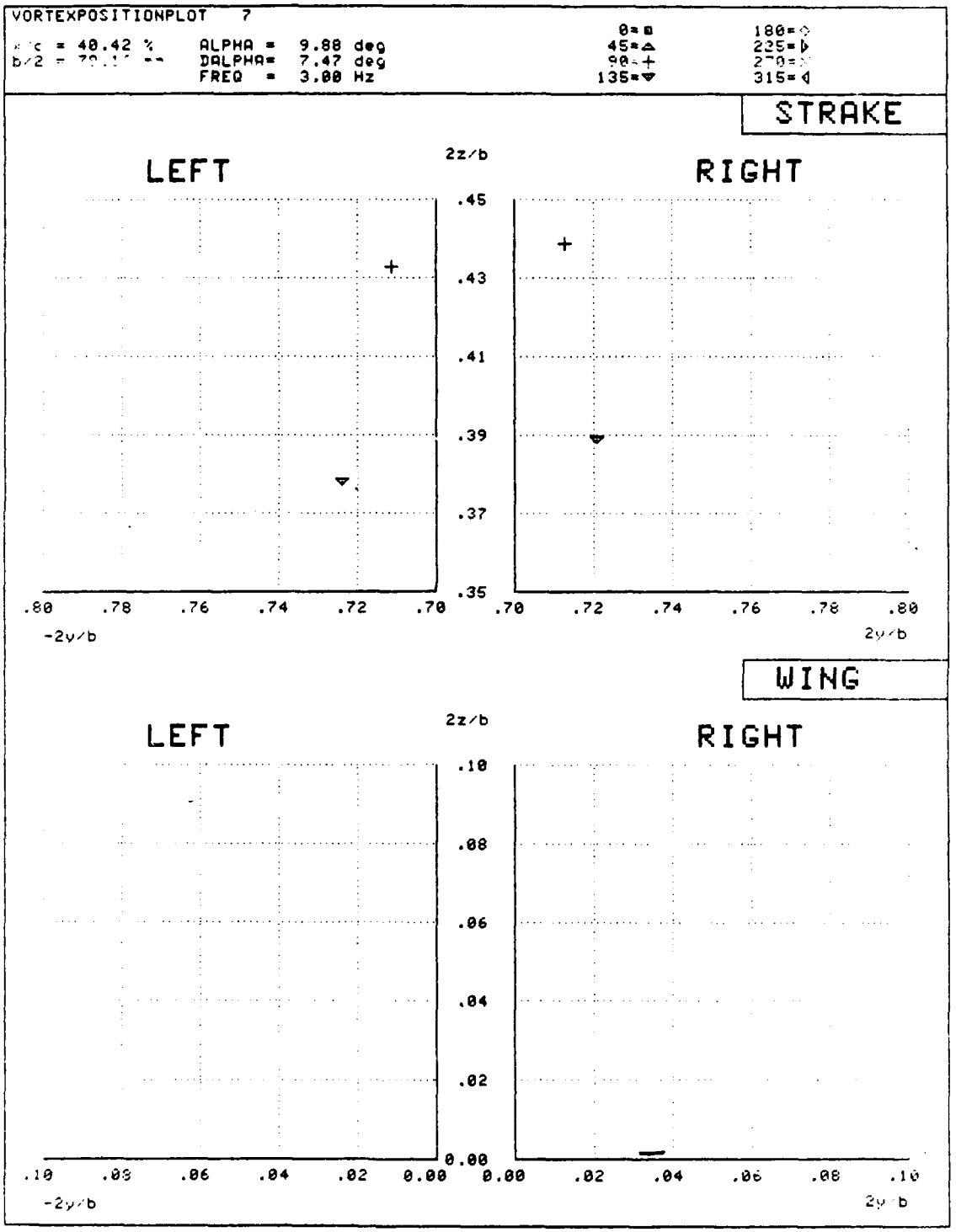

VORTEXPOSITIONPLOT 2
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 9.87 deg
DALPHA= 8.11 deg
FREQ = 1.13 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.44
.43
.42
.41
.40
.39
.75 .74 .73 .72 .71 .70
.70 .71 .72 .73 .74 .75
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

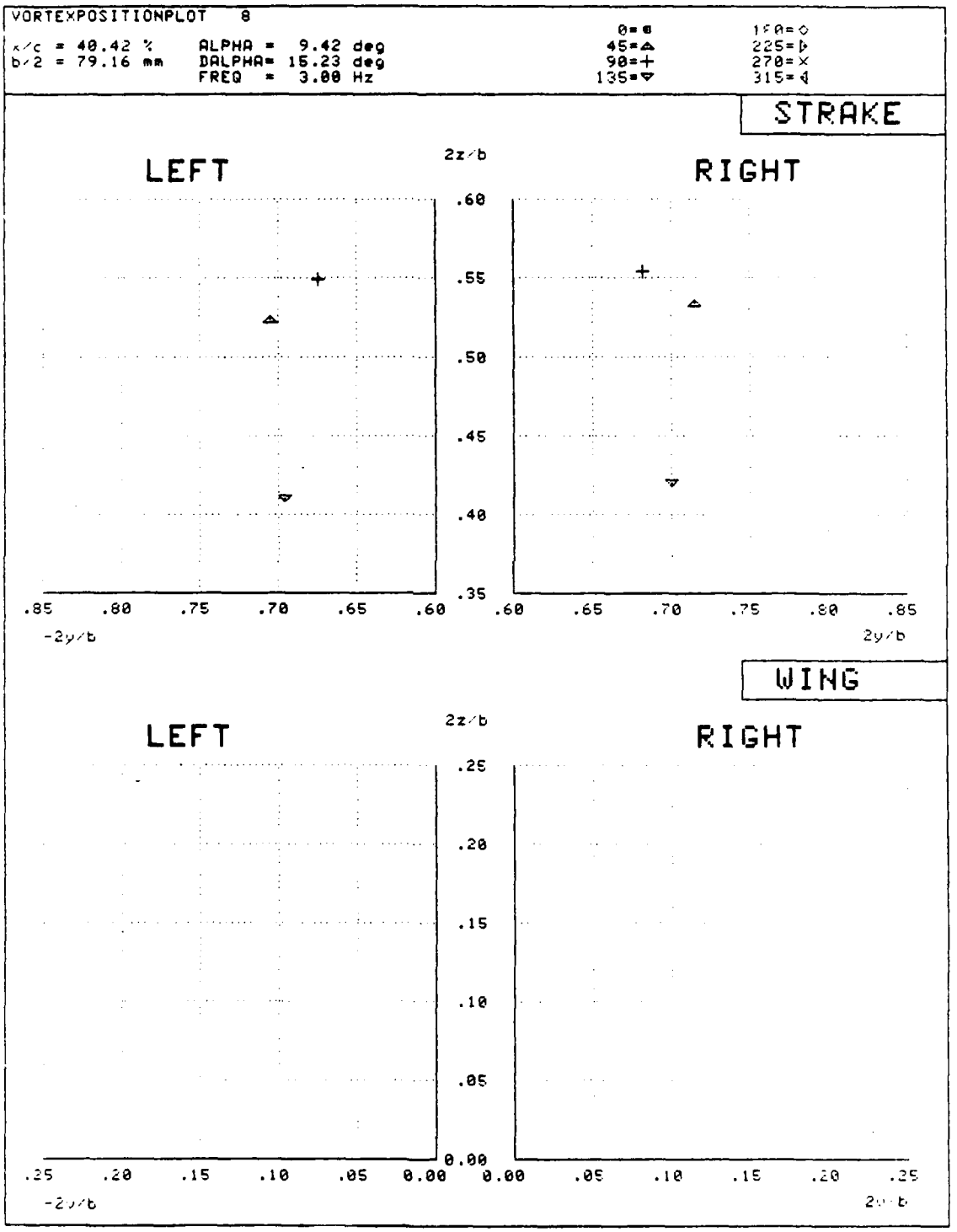

VORTEXPOSITIONPLOT 3
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 9.28 deg
DALPHA= 16.59 deg
FREQ = 1.13 Hz
0=
45=
90=+
135=
180=
225=
270=×
315=
STRAKE
LEFT
RIGHT
2z/b
.52
.50
.48
.46
.44
.42
.74 .72 .70 .68 .66 .64
.64 .66 .68 .70 .72 .74
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.10 .08 .06 .04 .02 0.00
0.00 .02 .04 .06 .08 .10
-2y/b
2y/b

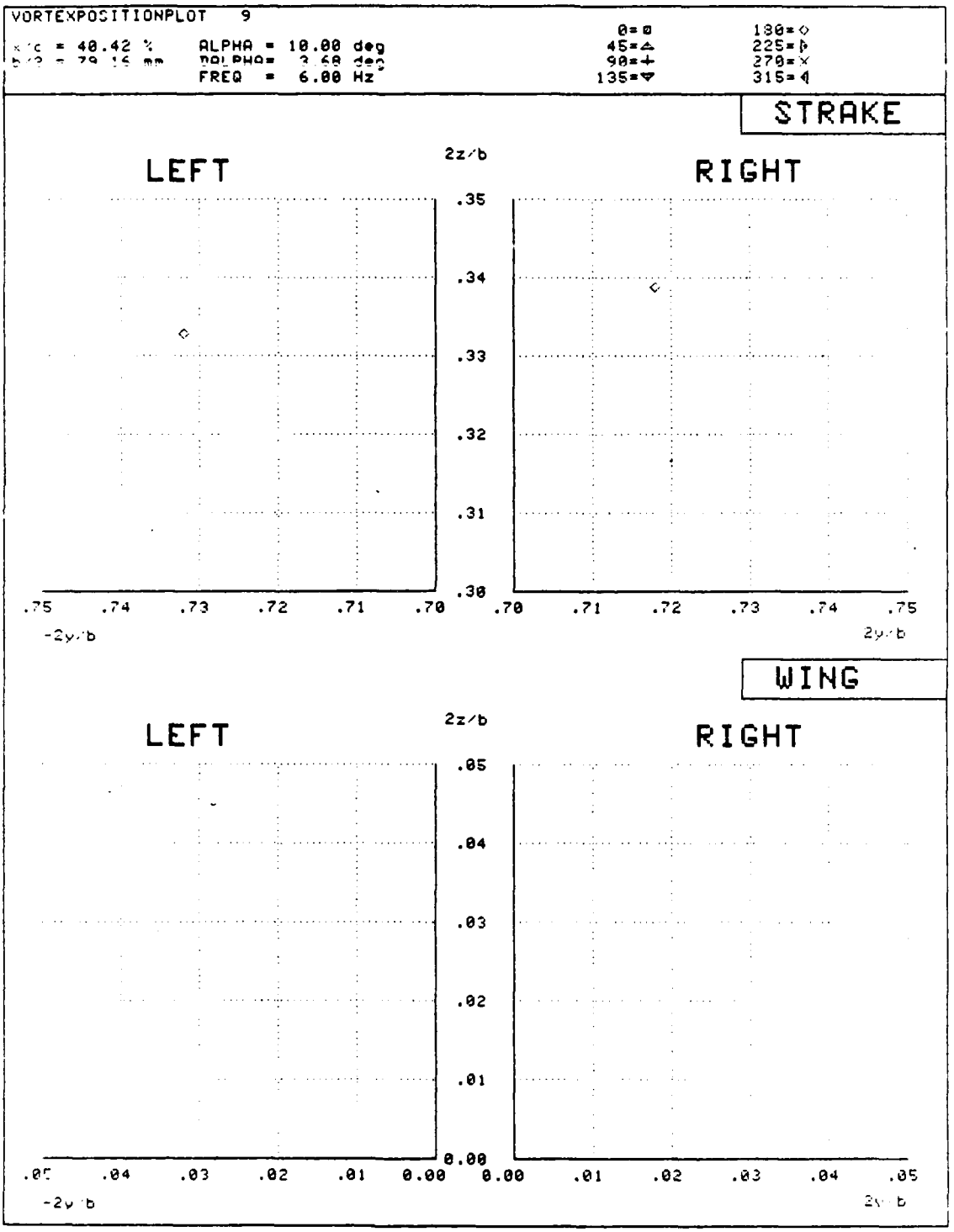

VORTEXPOSITIONPLOT 4
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 10.01 deg
DALPHA= 3.78 deg
FREQ = 1.88 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.50
.45
.40
.35
.30
.25
.85 .80 .75 .70 .65 .60
-2y/b
.60 .65 .70 .75 .80 .85
2y/b
WING
LEFT
RIGHT
2z/b
.25
.20
.15
.10
.05
0.00
.25 .20 .15 .10 .05 0.00
-2y/b
0.00 .05 .10 .15 .20 .25
2y/b

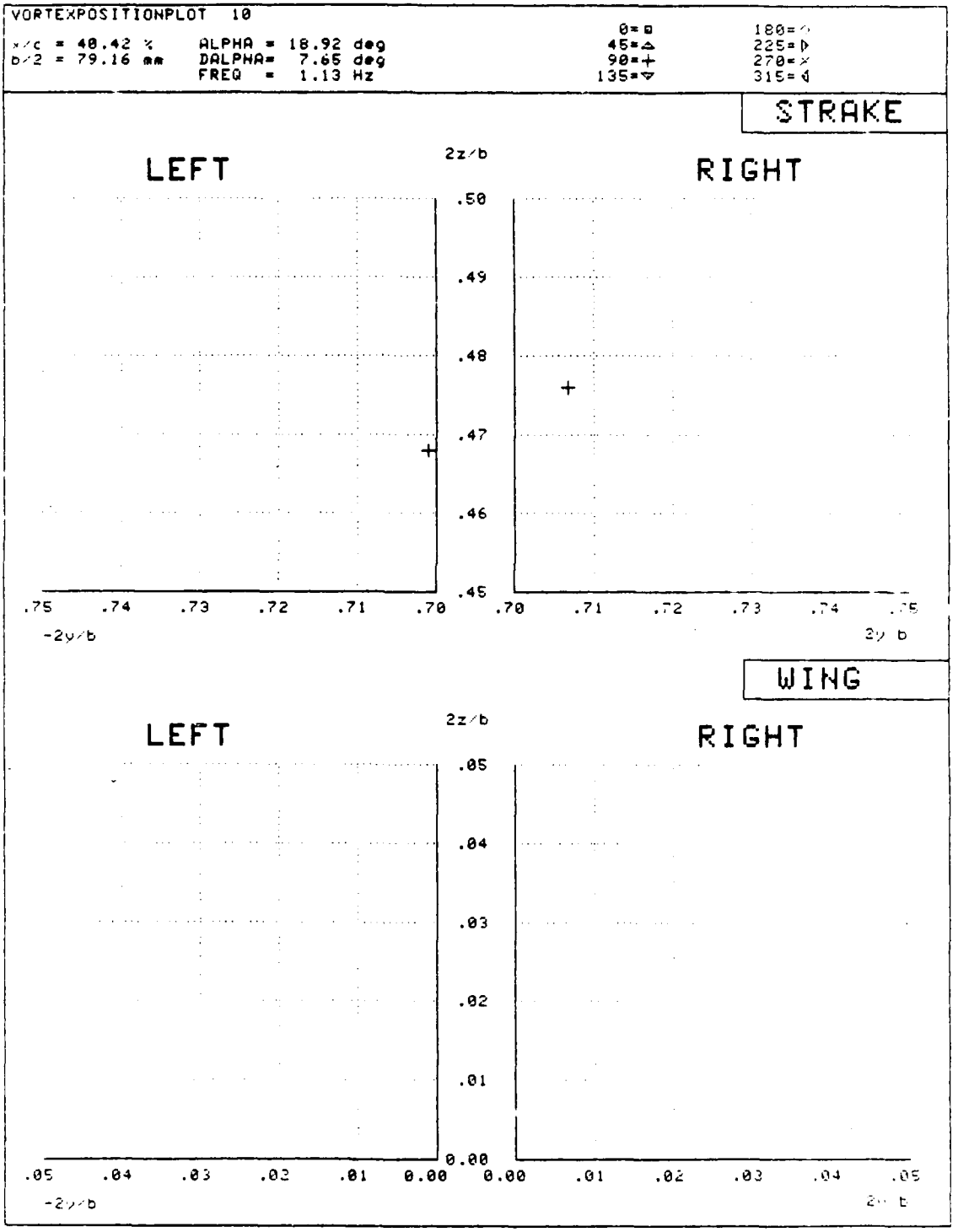

VORTEXPOSITIONPLOT 5
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 9.38 deg
DALPHA= 15.51 deg
FREQ = 1.88 Hz
0=○ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.56
.54
.52
.50
.48
.46
.75 .73 .71 .69 .67 .65
-2y/b
.65 .67 .69 .71 .73 .75
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.10 .08 .06 .04 .02 0.00
-2y/b
0.00 .02 .04 .06 .08 .10
2y/b

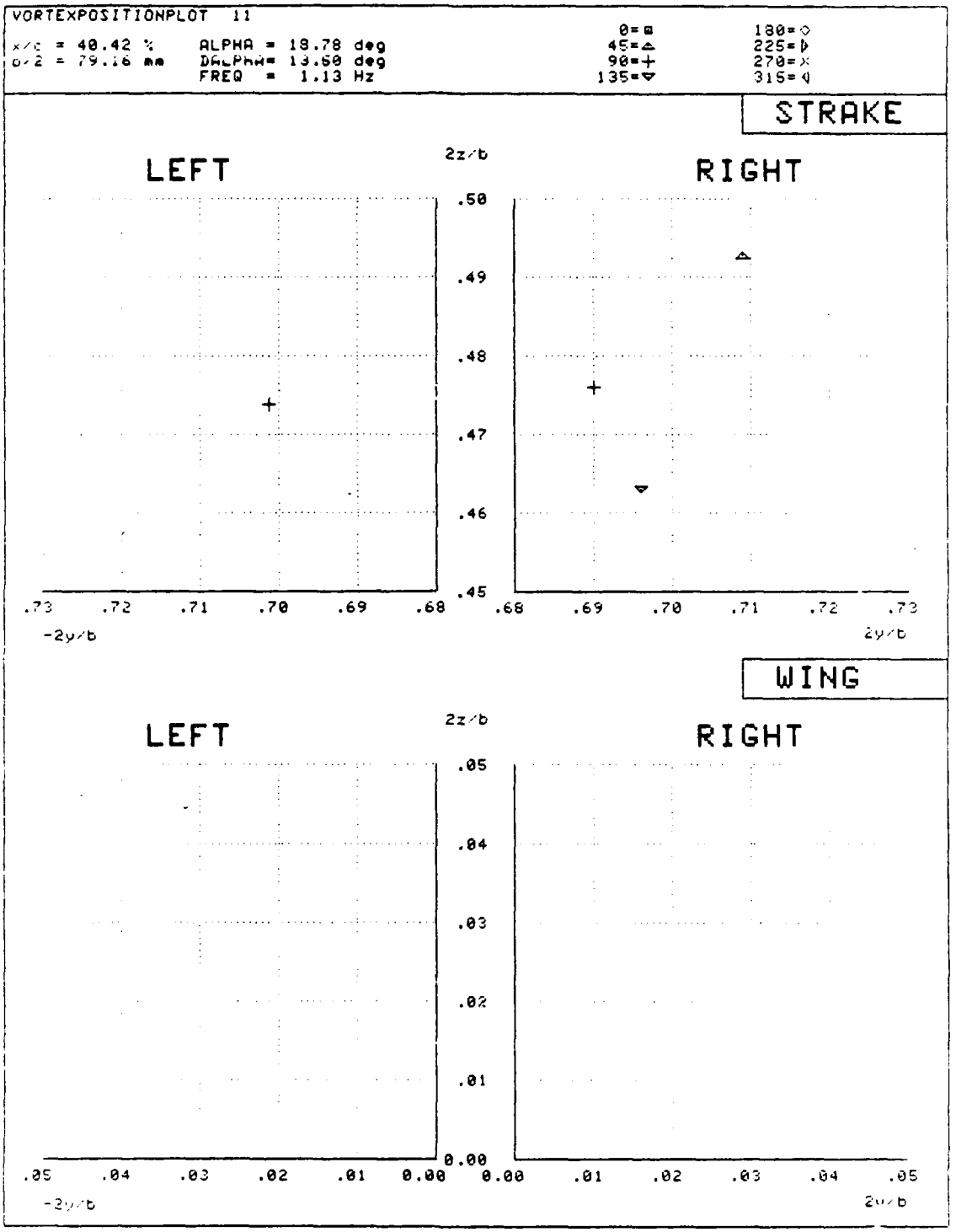

VORTEXPOSITIONPLOT 6
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 10.00 deg
DALPHA = 3.74 deg
FREQ = 3.00 Hz
0=●
45=△
90=+
135=▽
180=○
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.40
.39
.38
.37
.36
.35
.76 .75 .74 .73 .72 .71
.71 .72 .73 .74 .75 .76
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

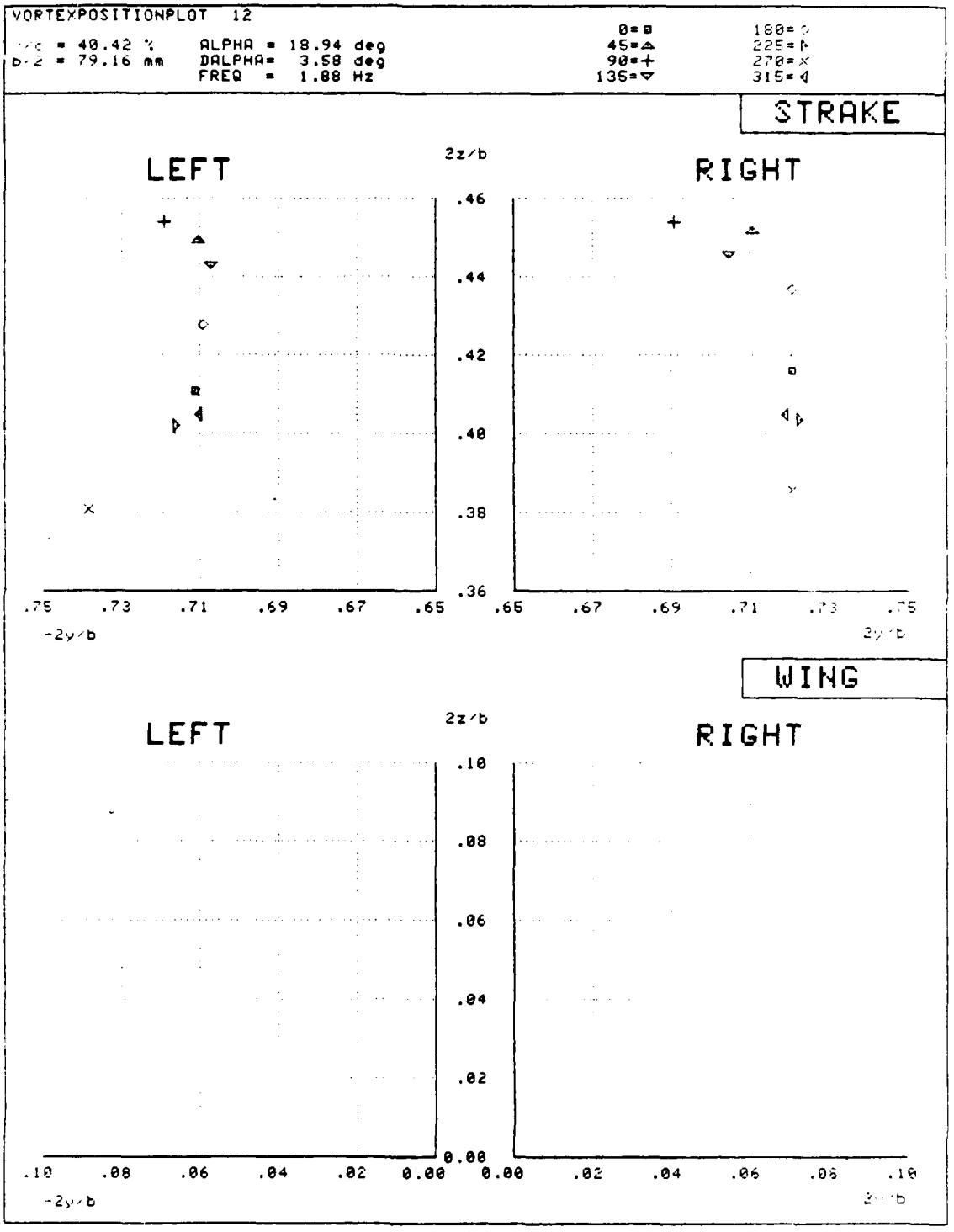

VORTEXPOSITIONPLOT 7
x/c = 40.42 %
b/2 = 79.17 %
ALPHA = 9.88 deg
DALPHA= 7.47 deg
FREQ = 3.00 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=▽
135=▼ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.45
.43
.41
.39
.37
.35
.80 .78 .76 .74 .72 .70
.70 .72 .74 .76 .78 .80
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.10 .08 .06 .04 .02 0.00
0.00 .02 .04 .06 .08 .10
-2y/b
2y/b

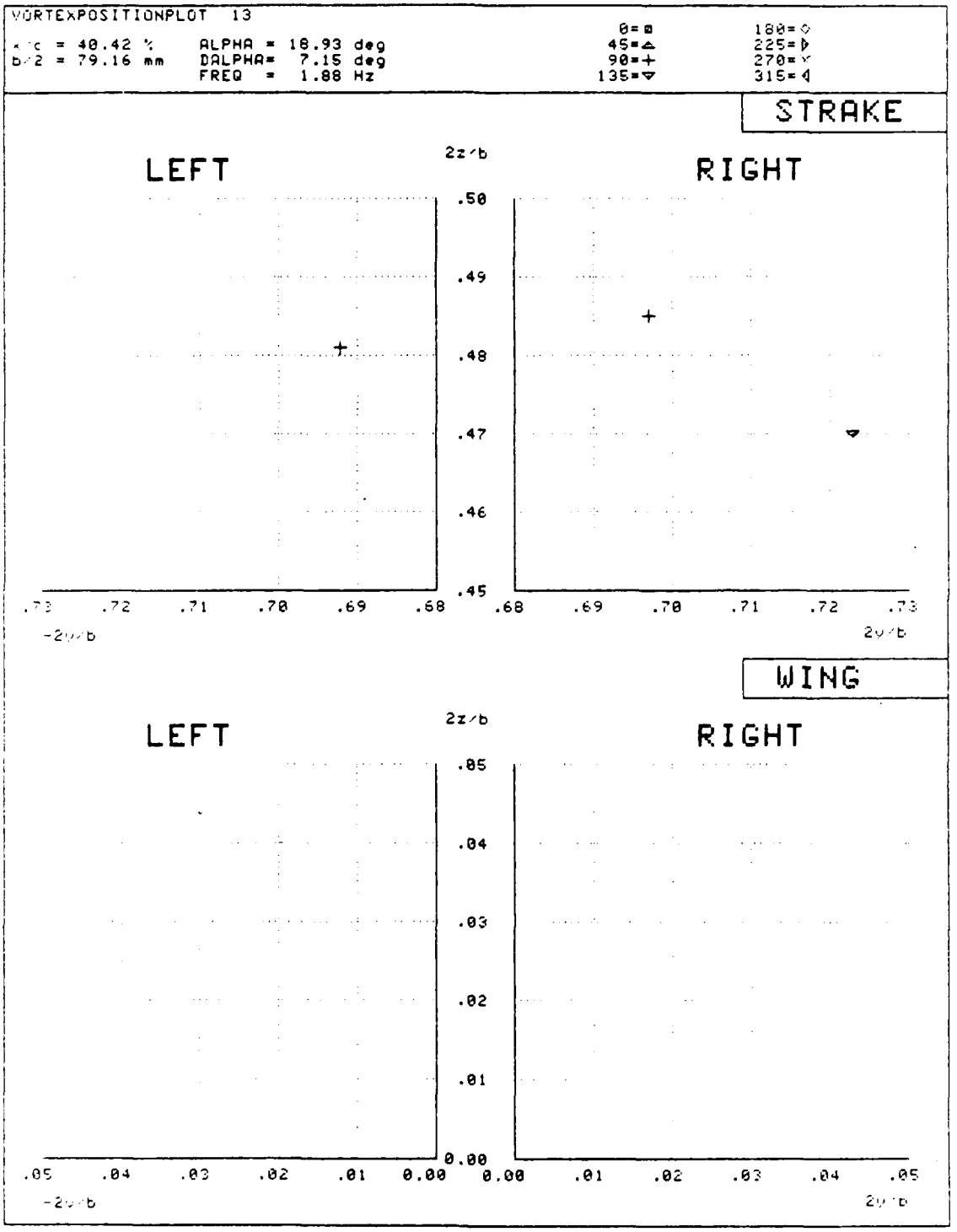

VORTEXPOSITIONPLOT 8
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 9.42 deg
DALPHA= 15.23 deg
FREQ = 3.00 Hz
0=
45=
90=+
135=
180=
225=
270=x
315=
STRAKE
LEFT
RIGHT
2z/b
.60
.55
.50
.45
.40
.35
.85 .80 .75 .70 .65 .60
-2y/b
.60 .65 .70 .75 .80 .85
2y/b
WING
LEFT
RIGHT
2z/b
.25
.20
.15
.10
.05
0.00
.25 .20 .15 .10 .05 0.00
-2y/b
0.00 .05 .10 .15 .20 .25

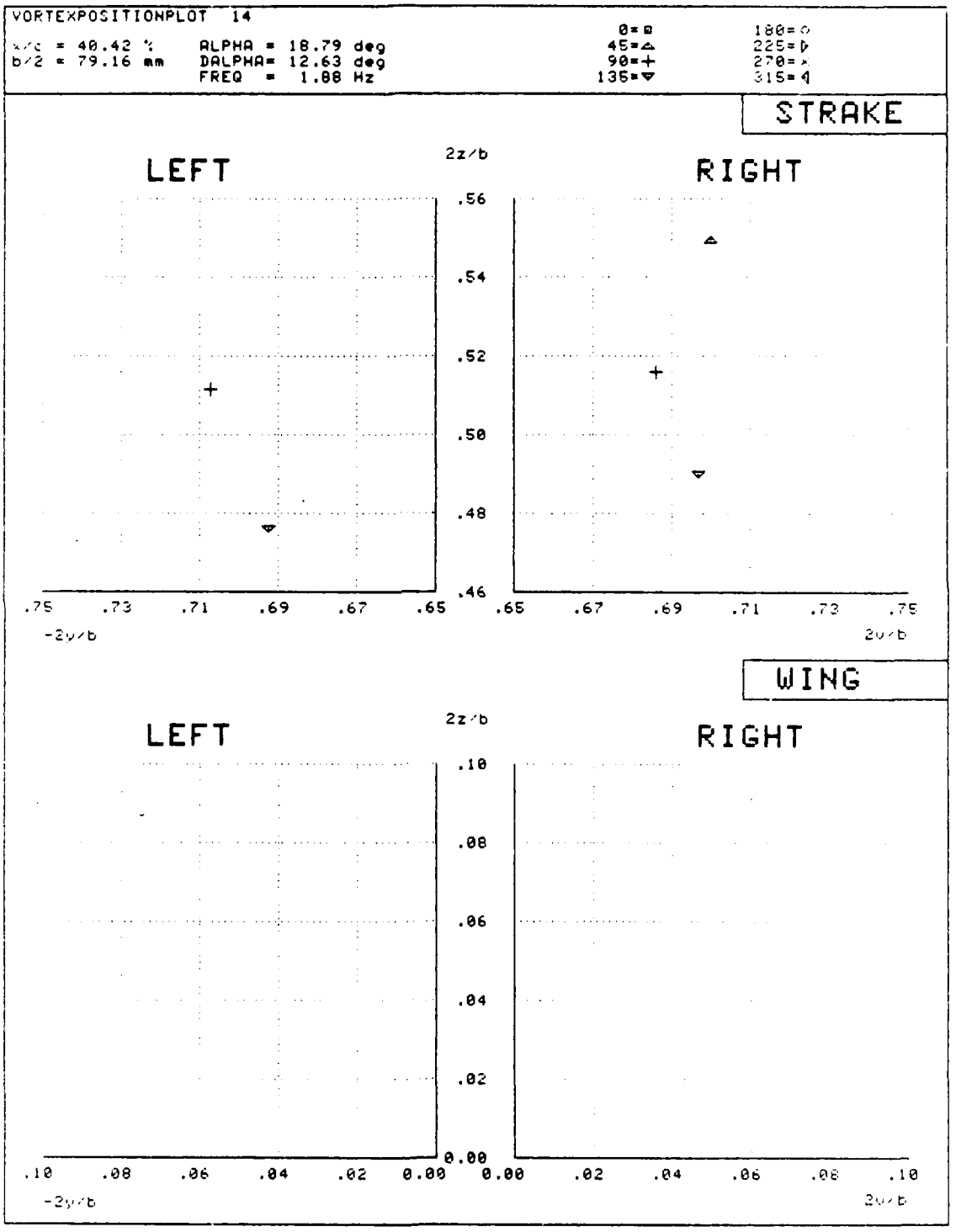

VORTEXPOSITIONPLOT 9
ALPHA = 10.00 deg
DELPHA= 3.68 deg
FREQ = 6.00 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.35
.34
.33
.32
.31
.30
.75 .74 .73 .72 .71 .70
.70 .71 .72 .73 .74 .75
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

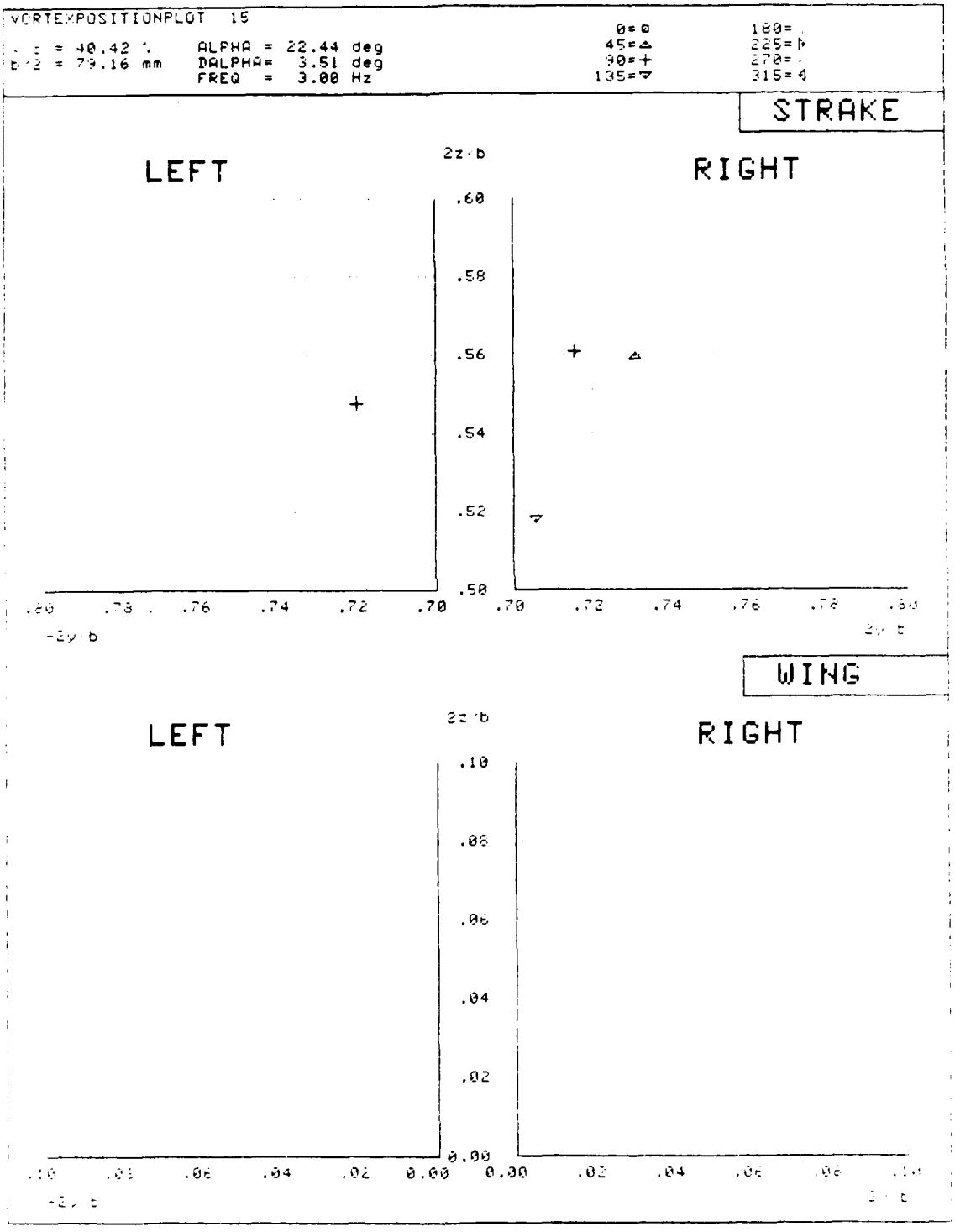

VORTEXPOSITIONPLOT 10
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 18.92 deg
DALPHA= 7.65 deg
FREQ = 1.13 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
2z/b
RIGHT
.50
.49
.48
.47
.46
.45
.75 .74 .73 .72 .71 .70
.70 .71 .72 .73 .74 .75
-2y/b
2y/b
WING
LEFT
2z/b
RIGHT
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

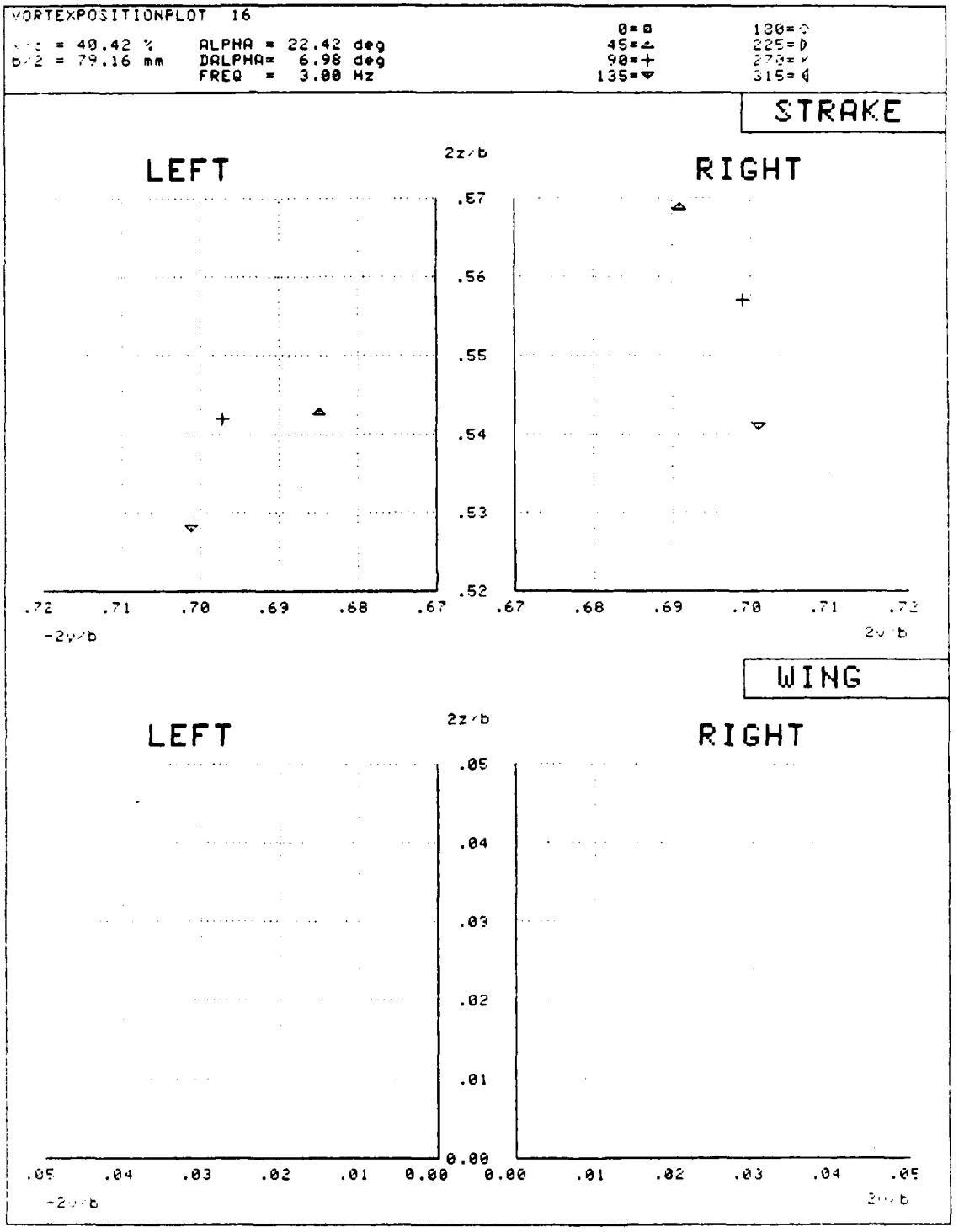

VORTEXPOSITIONPLOT 11
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 18.78 deg
DALPHA= 13.60 deg
FREQ = 1.13 Hz
0=■ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.50
.49
.48
.47
.46
.45
.73 .72 .71 .70 .69 .68
.68 .69 .70 .71 .72 .73
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

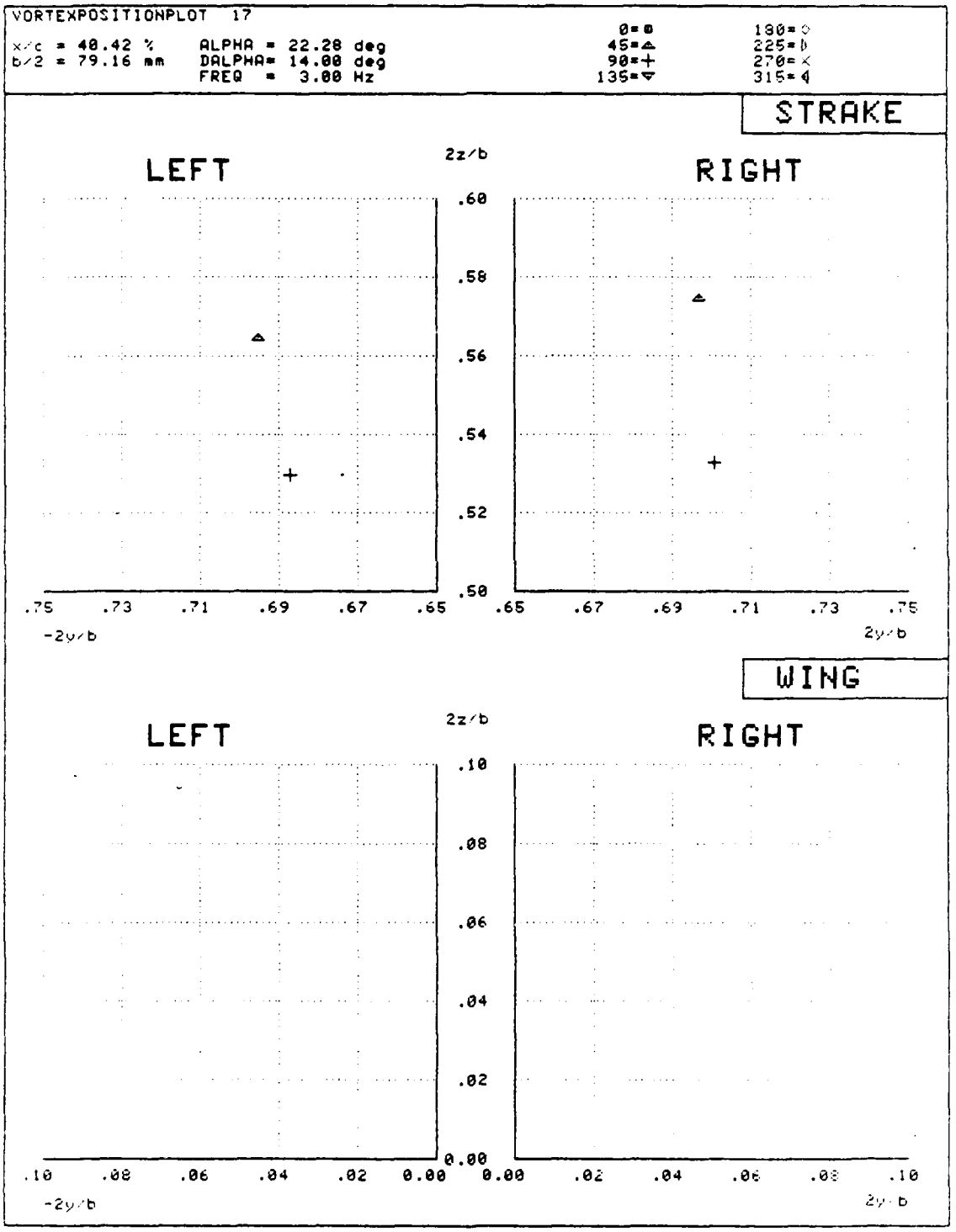

VORTEXPOSITIONPLOT 12
ALPHA = 18.94 deg
DALPHA= 3.58 deg
FREQ = 1.88 Hz
0=□
45=△
90=+
135=▽
180=○
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.46
.44
.42
.40
.38
.36
.75 .73 .71 .69 .67 .65
.65 .67 .69 .71 .73 .75
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.10 .08 .06 .04 .02 0.00
0.00 .02 .04 .06 .08 .10
-2y/b
2y/b

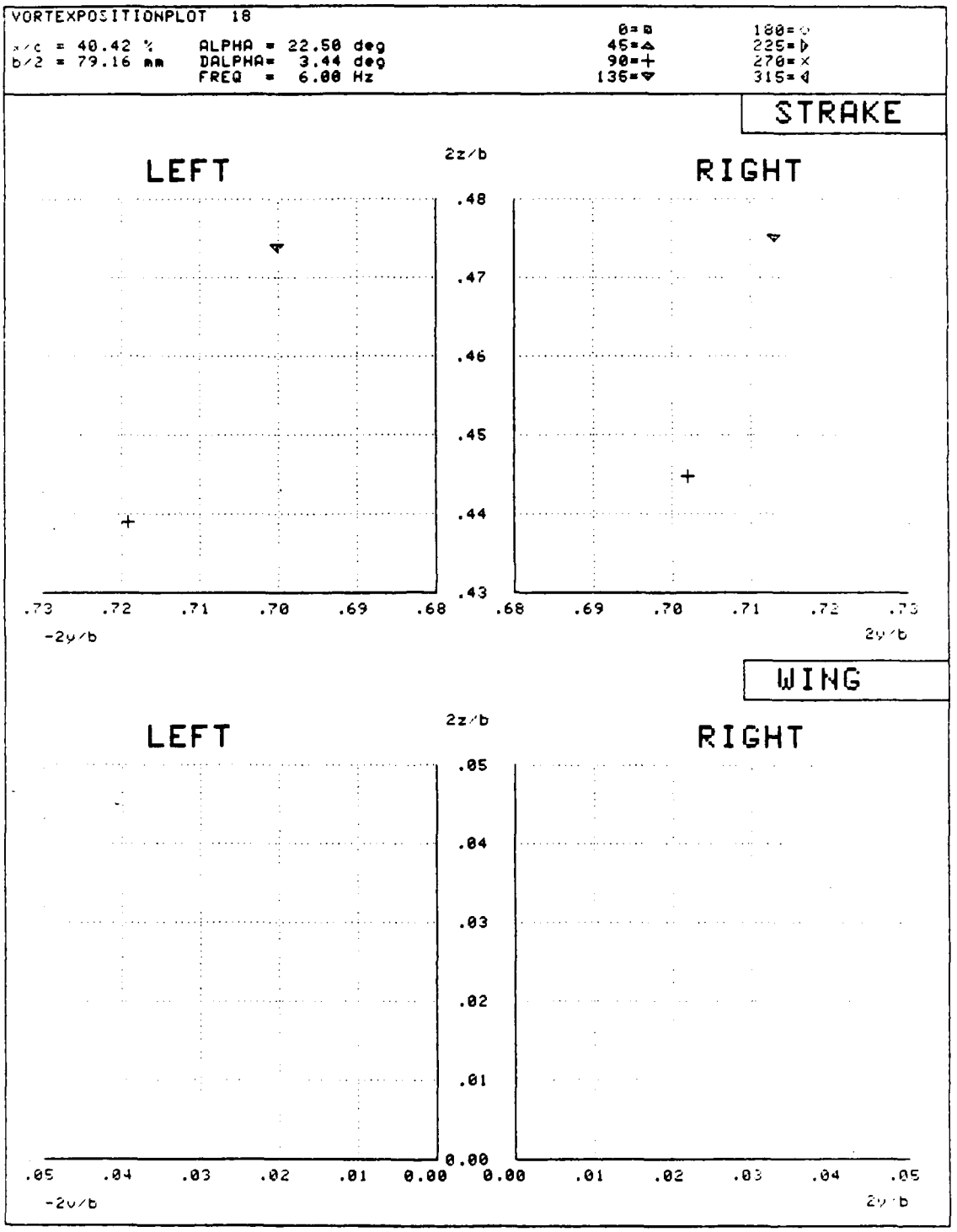

VORTEXPOSITIONPLOT 13
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 18.93 deg
DALPHA= 7.15 deg
FREQ = 1.88 Hz
0=■
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.50
.49
.48
.47
.46
.45
.73 .72 .71 .70 .69 .68
.68 .69 .70 .71 .72 .73
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

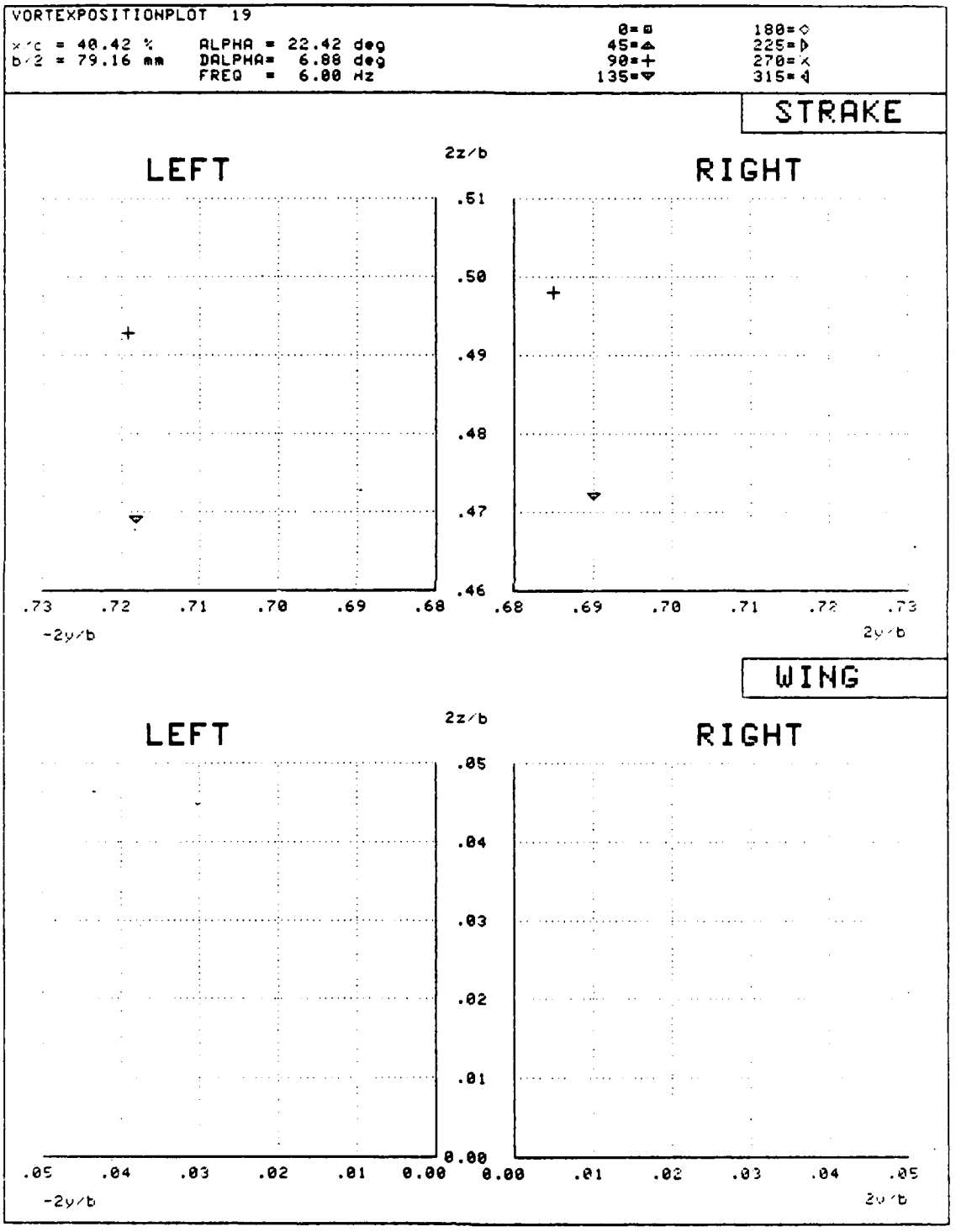

VORTEXPOSITIONPLOT 14
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 18.79 deg
DALPHA= 12.63 deg
FREQ = 1.88 Hz
0=□
45=△
90=+
135=▽
180=○
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.56
.54
.52
.50
.48
.46
.75 .73 .71 .69 .67 .65
-2y/b
.65 .67 .69 .71 .73 .75
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.10 .08 .06 .04 .02 0.00
-2y/b
0.00 .02 .04 .06 .08 .10
2y/b

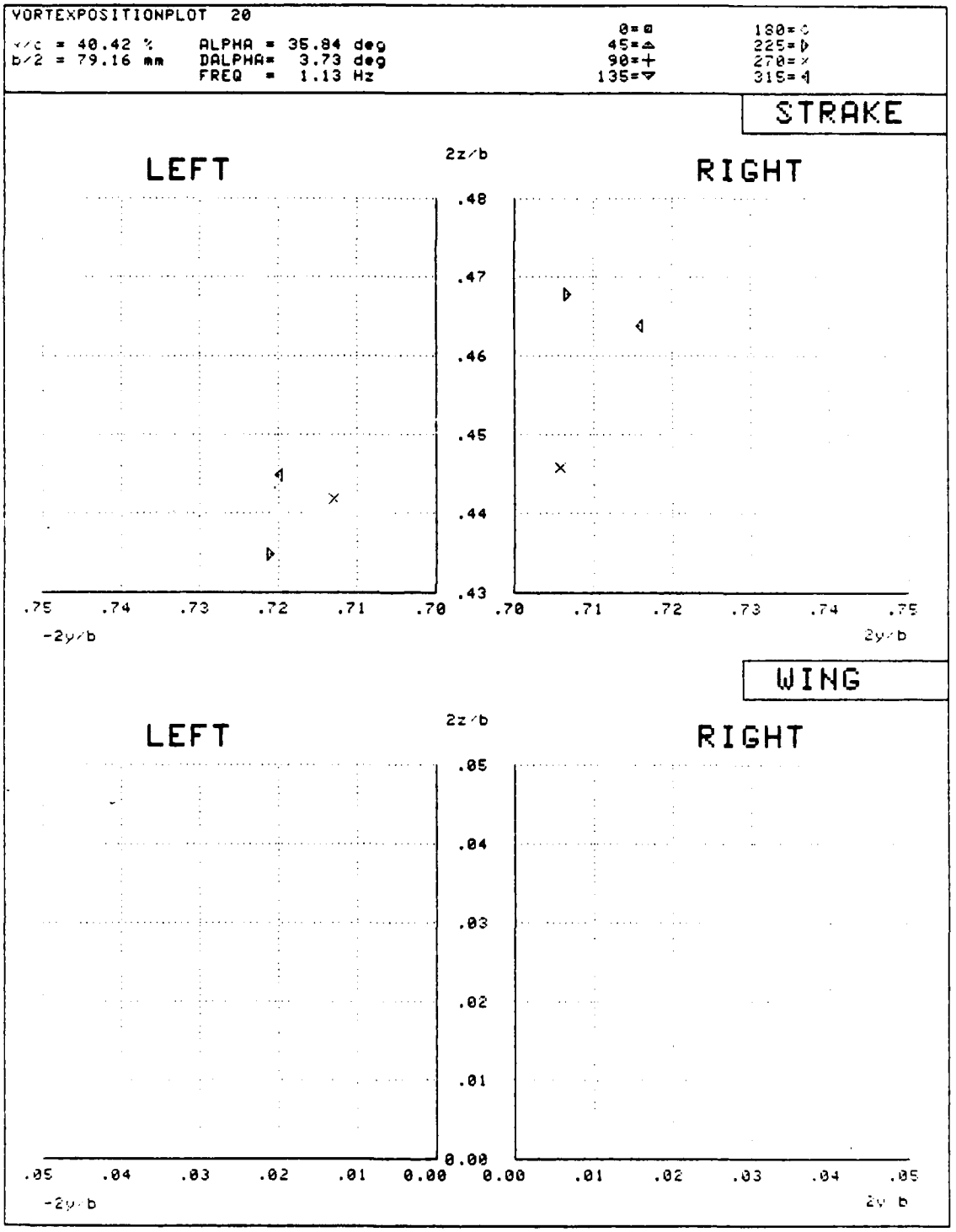

VORTEXPOSITIONPLOT 15
ALPHA = 22.44 deg
DALPHA= 3.51 deg
FREQ = 3.00 Hz
0=
45=
90=+
135=
180=
225=
270=
315=
STRAKE
LEFT
RIGHT
2z/b
.60
.58
.56
.54
.52
.50
.80
.78
.76
.74
.72
.70
.70
.72
.74
.76
.78
.80
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.10
.08
.06
.04
.02
0.00
0.00
.02
.04
.06
.08
.10
-2y/b
2y/b

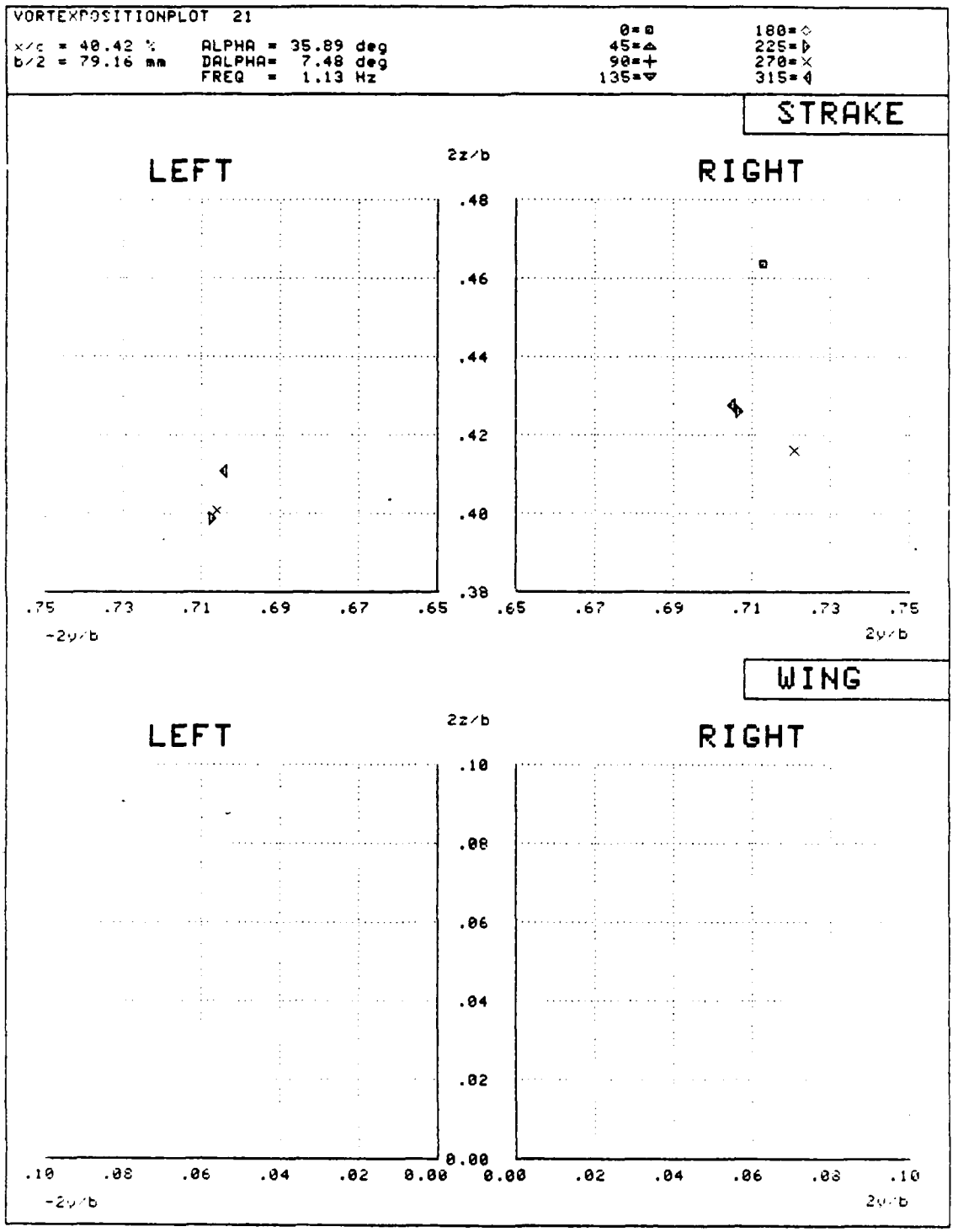

VORTEXPOSITIONPLOT 16
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 22.42 deg
DALPHA= 6.98 deg
FREQ = 3.00 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.57
.56
.55
.54
.53
.52
.72 .71 .70 .69 .68 .67
.67 .68 .69 .70 .71 .72
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

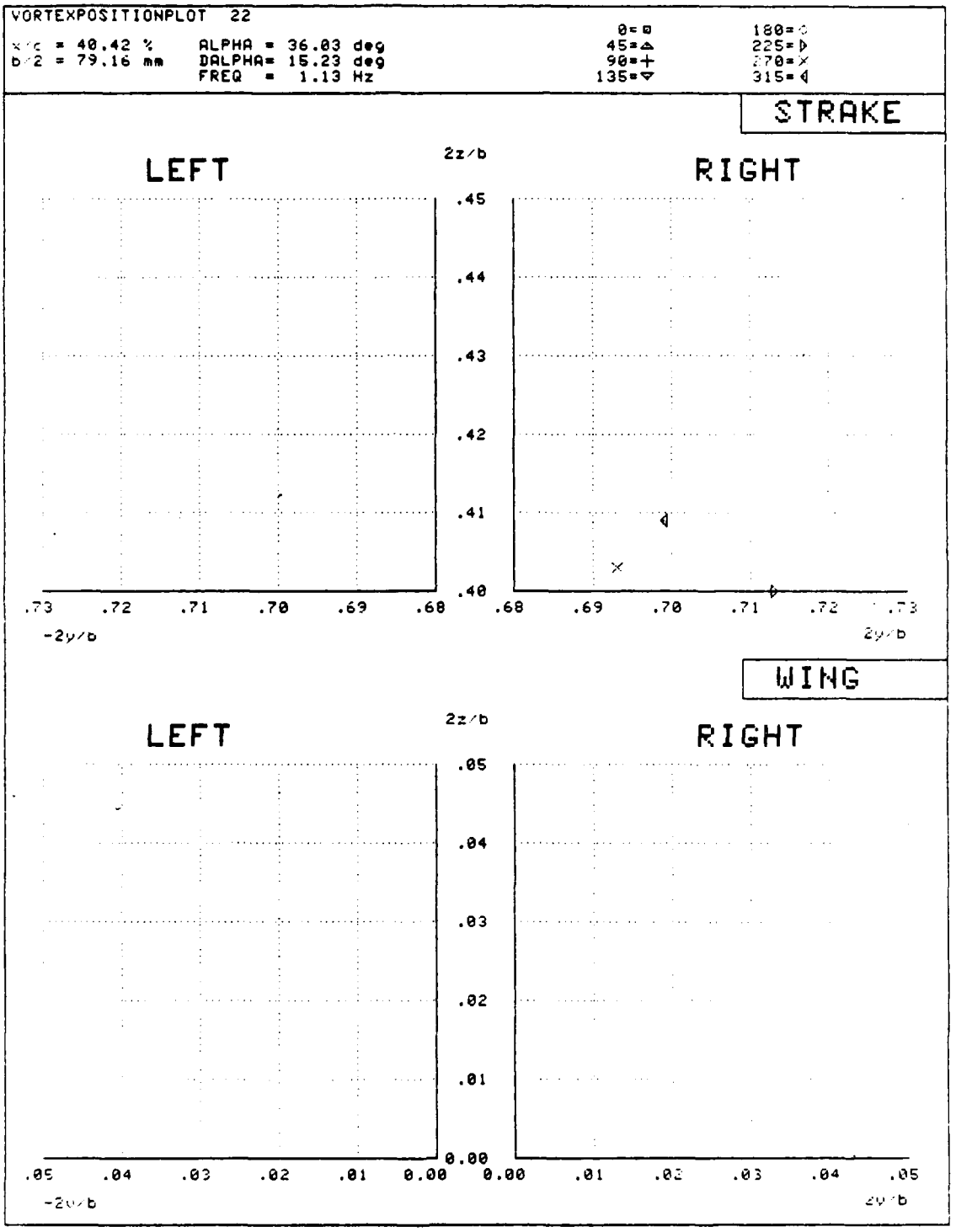

VORTEXPOSITIONPLOT 17
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 22.28 deg
DALPHA= 14.00 deg
FREQ = 3.00 Hz
0=■ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.60
.58
.56
.54
.52
.50
.75 .73 .71 .69 .67 .65
.65 .67 .69 .71 .73 .75
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.10 .08 .06 .04 .02 0.00
0.00 .02 .04 .06 .08 .10
-2y/b
2y/b

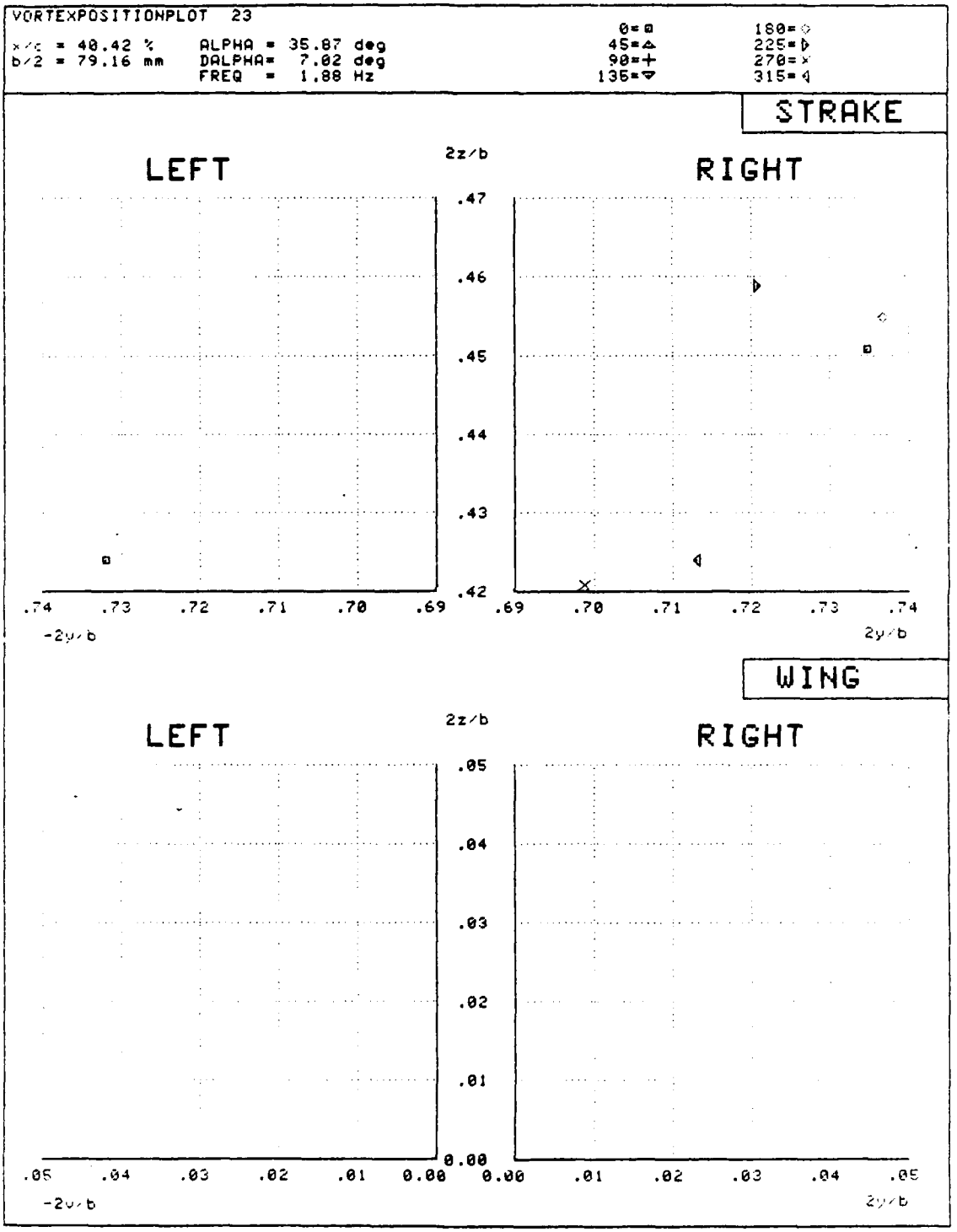

VORTEXPOSITIONPLOT 18
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 22.50 deg
DALPHA= 3.44 deg
FREQ = 6.00 Hz
0=□
45=△
90=+
135=▽
180=○
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.48
.47
.46
.45
.44
.43
.73 .72 .71 .70 .69 .68
.68 .69 .70 .71 .72 .73
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

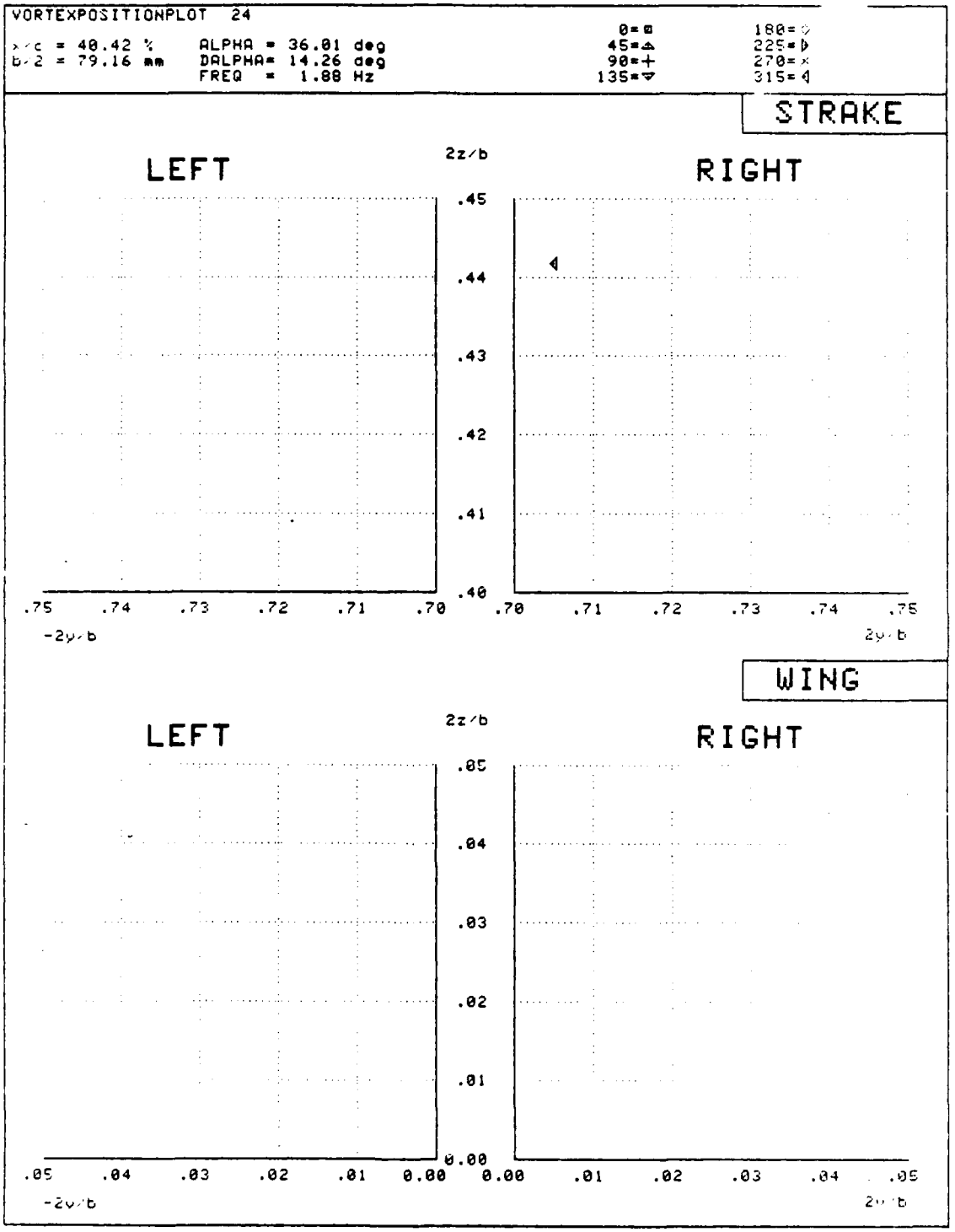

VORTEXPOSITIONPLOT 19
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 22.42 deg
DALPHA= 6.88 deg
FREQ = 6.00 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.51
.50
.49
.48
.47
.46
.73 .72 .71 .70 .69 .68
-2y/b
.68 .69 .70 .71 .72 .73
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
-2y/b
0.00 .01 .02 .03 .04 .05
2y/b

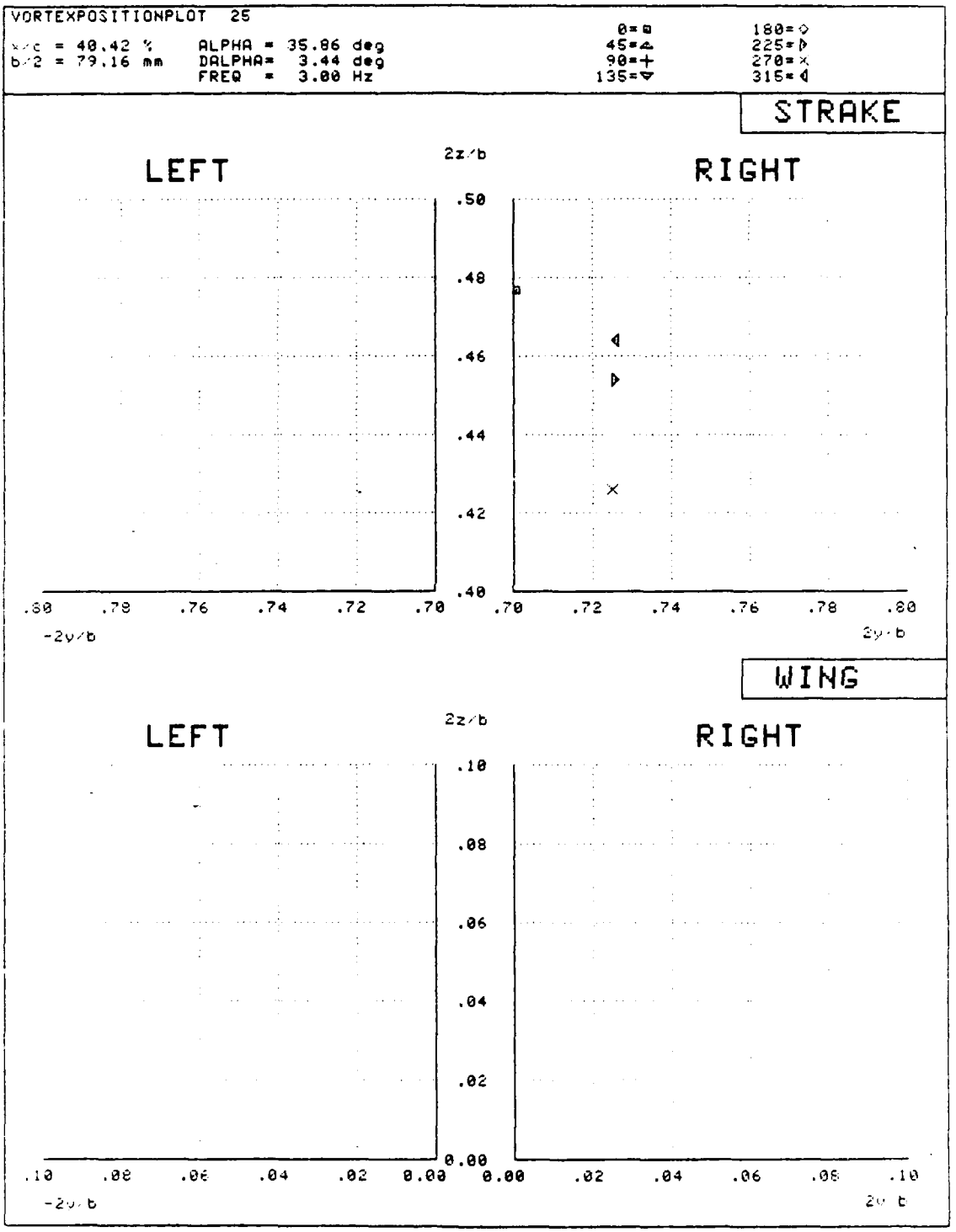

VORTEXPOSITIONPLOT 20
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 35.84 deg
DALPHA= 3.73 deg
FREQ = 1.13 Hz
0=○ 180=○
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.48
.47
.46
.45
.44
.43
.75 .74 .73 .72 .71 .70
-2y/b
.70 .71 .72 .73 .74 .75
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
-2y/b
0.00 .01 .02 .03 .04 .05
2y/b

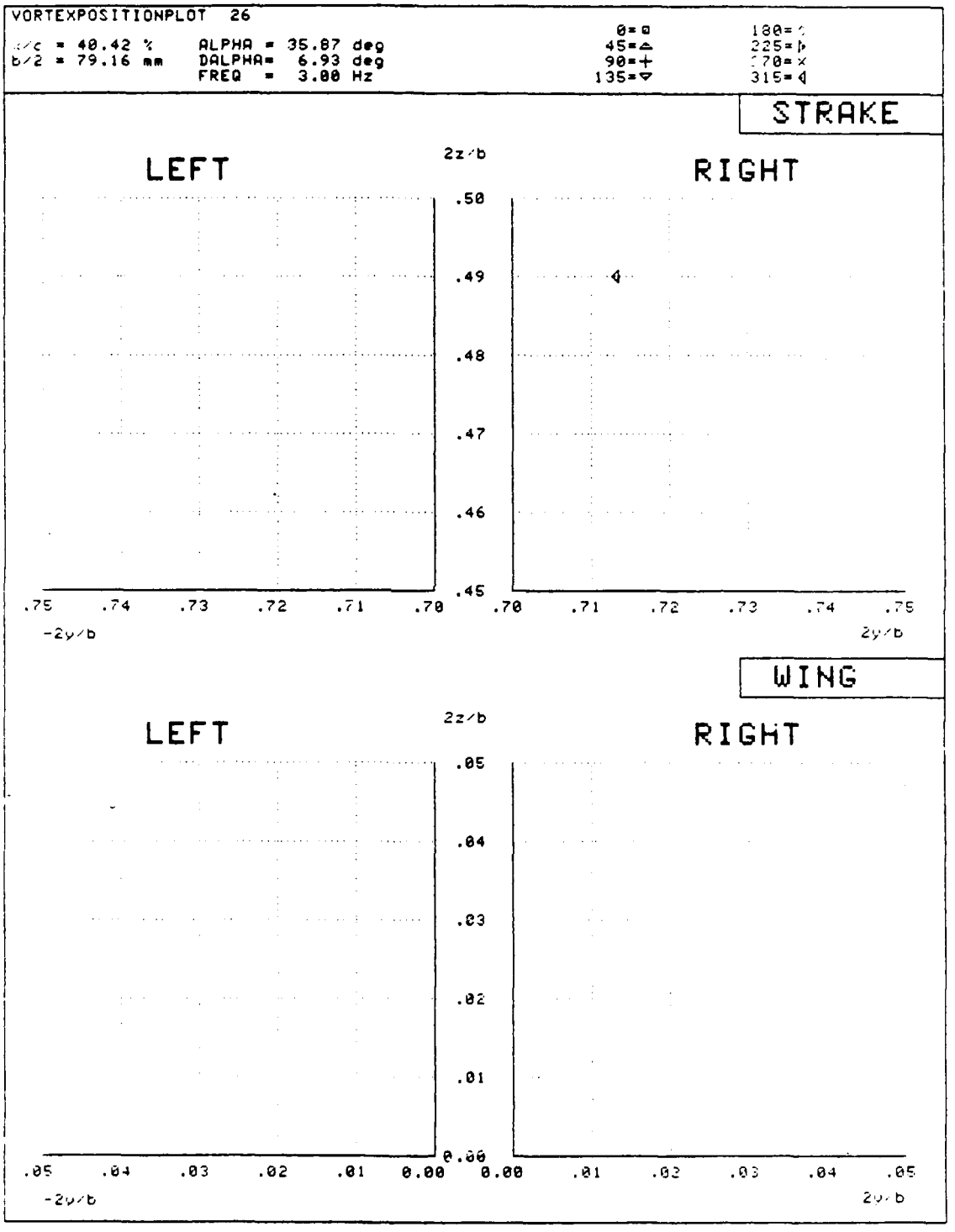

VORTEXPOSITIONPLOT 21
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 35.89 deg
DALPHA= 7.48 deg
FREQ = 1.13 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.48
.46
.44
.42
.40
.38
.75 .73 .71 .69 .67 .65
.65 .67 .69 .71 .73 .75
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.10 .08 .06 .04 .02 0.00
0.00 .02 .04 .06 .08 .10
-2y/b
2y/b

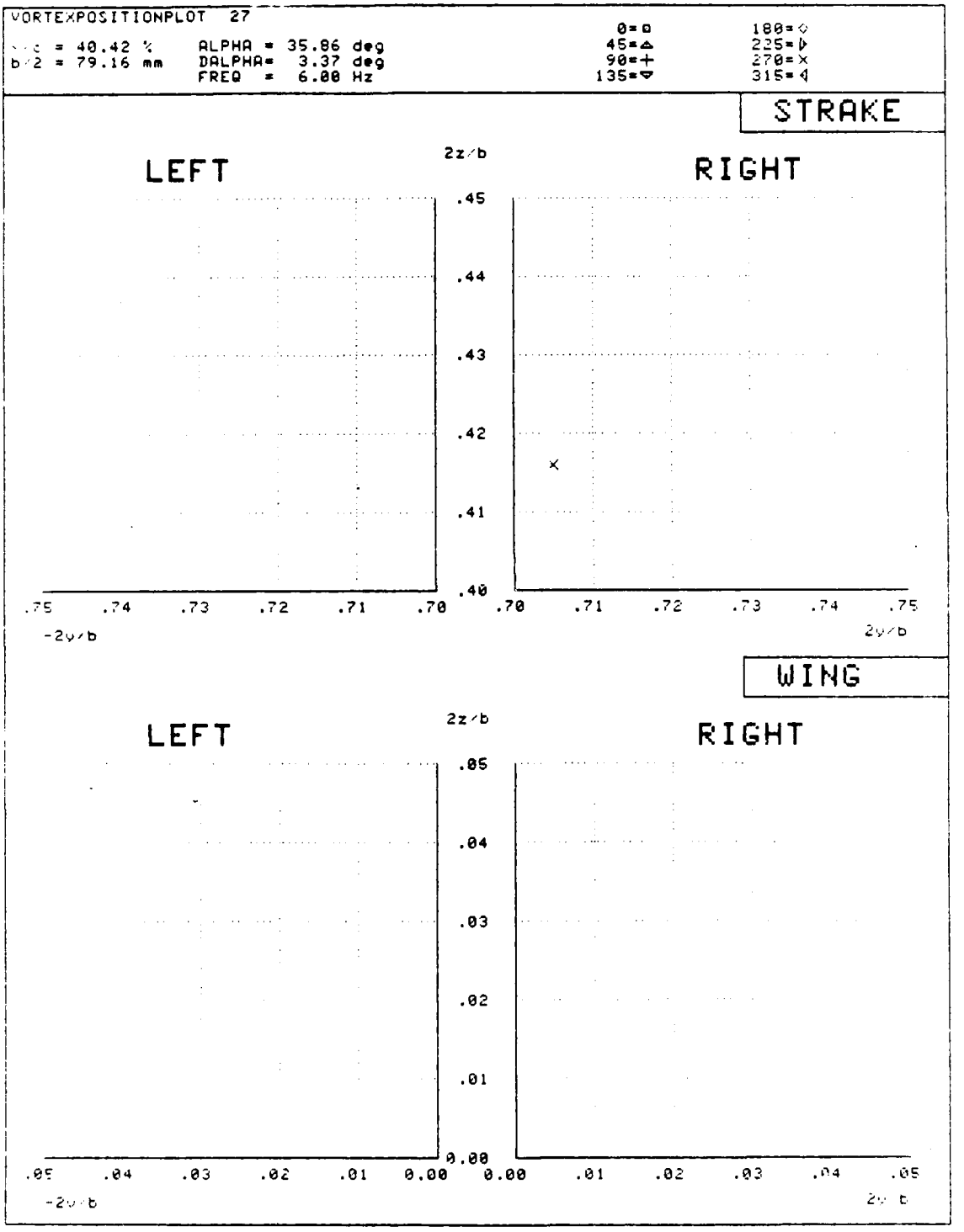

VORTEXPOSITIONPLOT 22
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 36.03 deg
DALPHA= 15.23 deg
FREQ = 1.13 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
2z/b
RIGHT
.45
.44
.43
.42
.41
.40
.73 .72 .71 .70 .69 .68
.68 .69 .70 .71 .72 .73
-2y/b
2y/b
WING
LEFT
2z/b
RIGHT
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

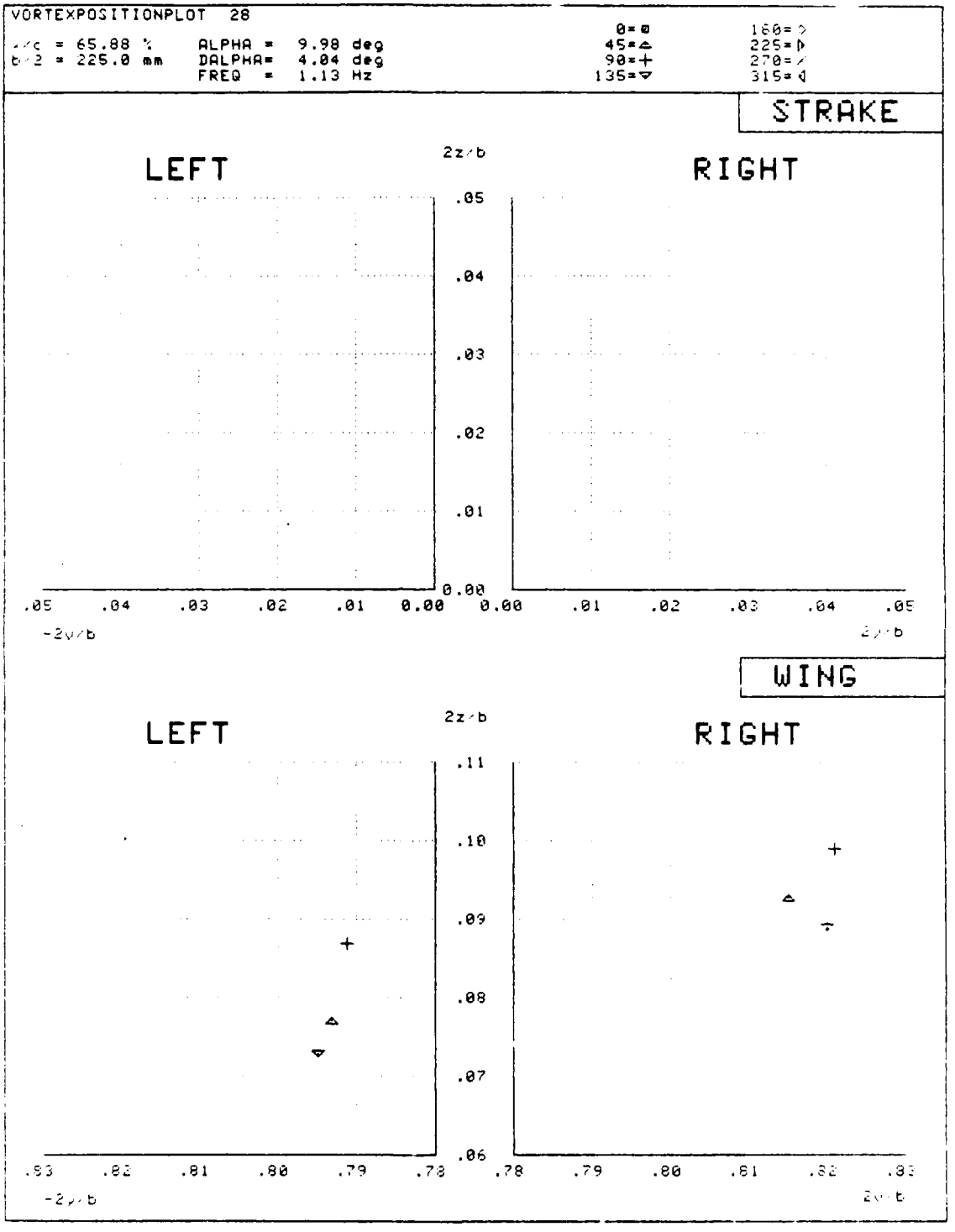

VORTEXPOSITIONPLOT 23
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 35.87 deg
DALPHA= 7.02 deg
FREQ = 1.88 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.47
.46
.45
.44
.43
.42
.74 .73 .72 .71 .70 .69
.69 .70 .71 .72 .73 .74
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

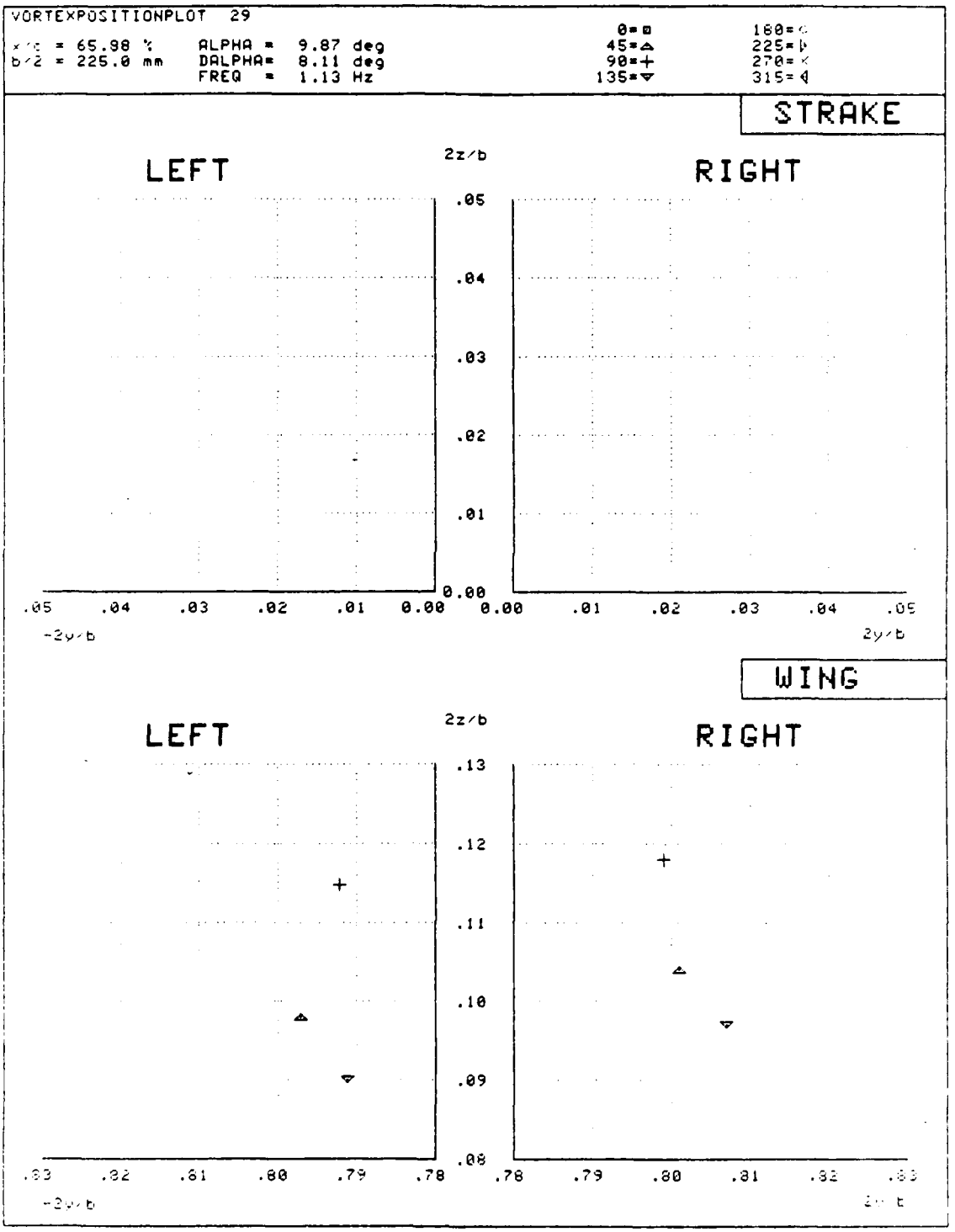

VORTEXPOSITIONPLOT 24
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 36.01 deg
DALPHA= 14.26 deg
FREQ = 1.88 Hz
0=□ 180=▽
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
2z/b
RIGHT
.45
.44
.43
.42
.41
.40
.75 .74 .73 .72 .71 .70
.70 .71 .72 .73 .74 .75
-2y/b
2y/b
WING
LEFT
2z/b
RIGHT
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

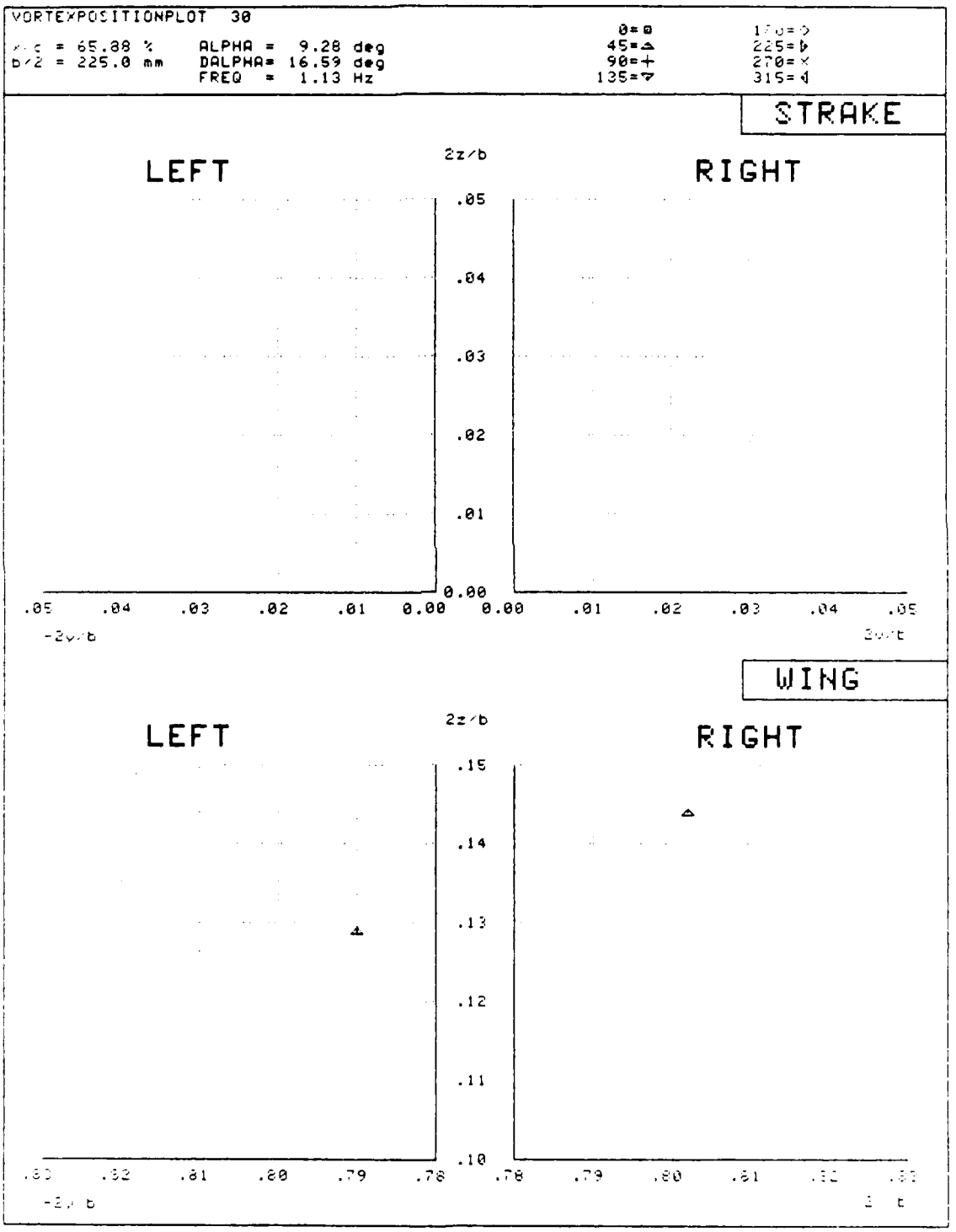

VORTEXPOSITIONPLOT 25
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 35.86 deg
DALPHA= 3.44 deg
FREQ = 3.00 Hz
0=
45=
90=+
135=
180=
225=
270=×
315=
STRAKE
LEFT
RIGHT
2z/b
.50
.48
.46
.44
.42
.40
.80 .78 .76 .74 .72 .70
-2y/b
.70 .72 .74 .76 .78 .80
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.10 .08 .06 .04 .02 0.00
-2y/b
0.00 .02 .04 .06 .08 .10
2y/b

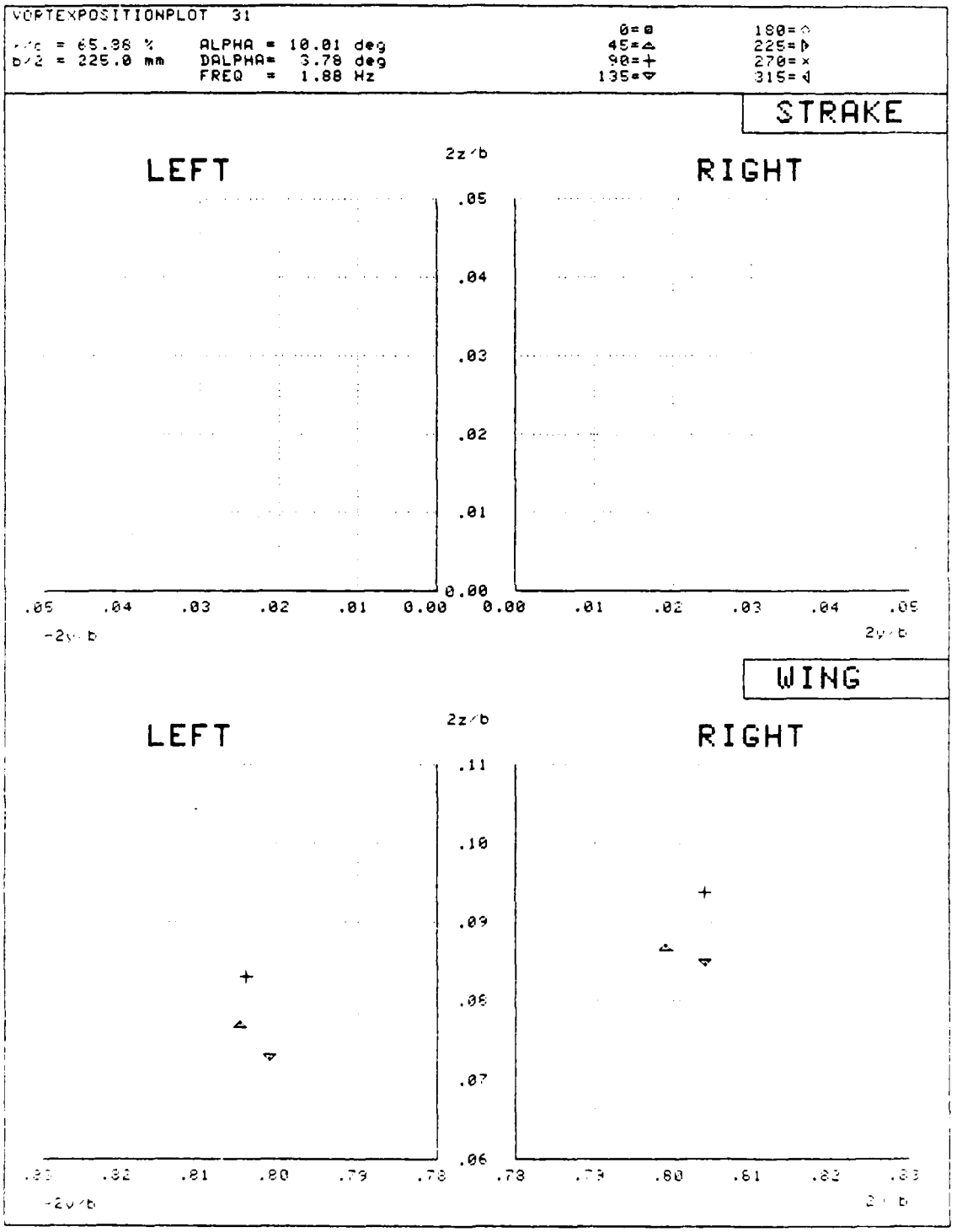

VORTEXPOSITIONPLOT 26
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 35.87 deg
DALPHA= 6.93 deg
FREQ = 3.00 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.50
.49
.48
.47
.46
.45
.75 .74 .73 .72 .71 .70
.70 .71 .72 .73 .74 .75
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

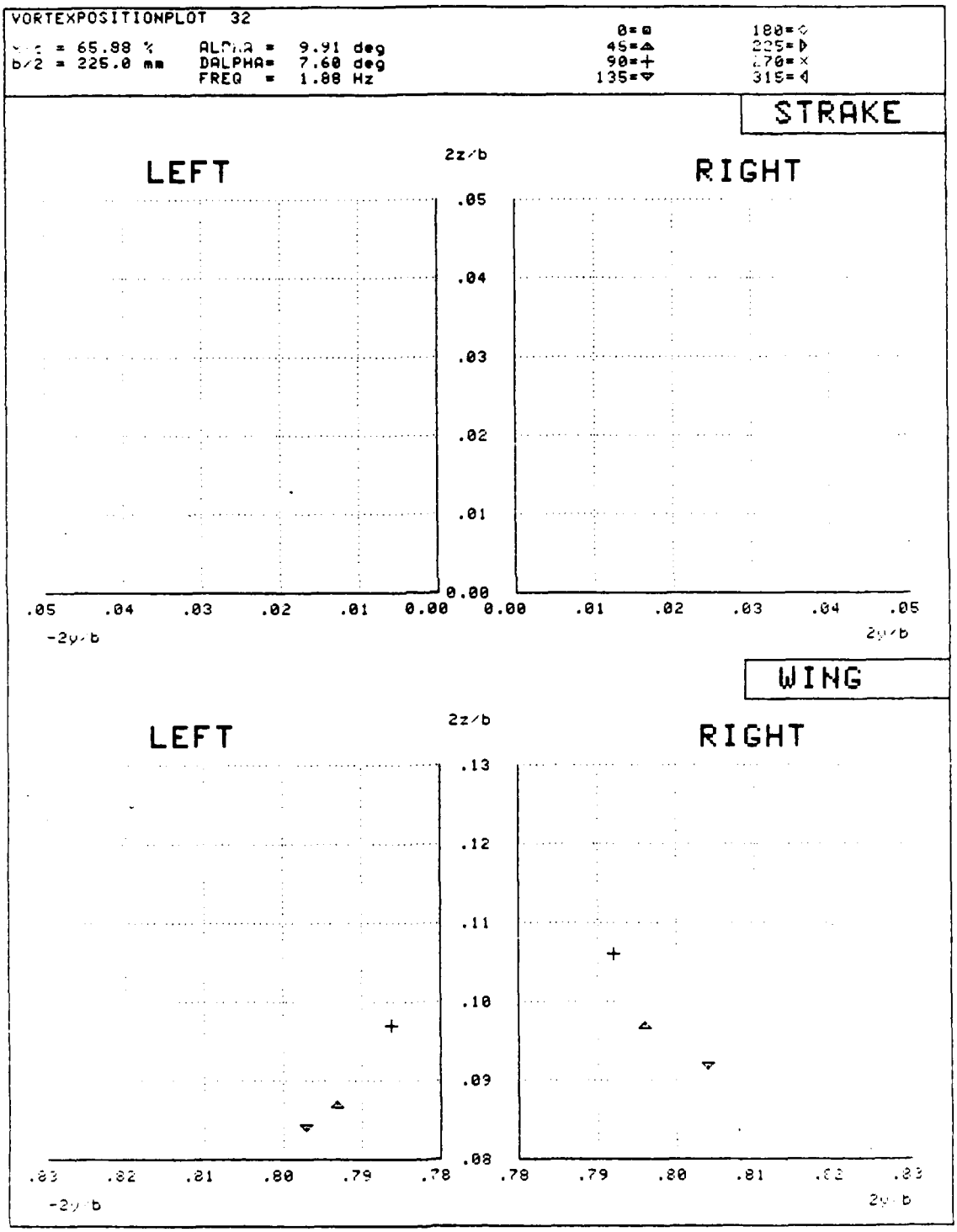

VORTEXPOSITIONPLOT 27
x/c = 40.42 %
b/2 = 79.16 mm
ALPHA = 35.86 deg
DALPHA= 3.37 deg
FREQ = 6.00 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.45
.44
.43
.42
.41
.40
.75 .74 .73 .72 .71 .70
.70 .71 .72 .73 .74 .75
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b

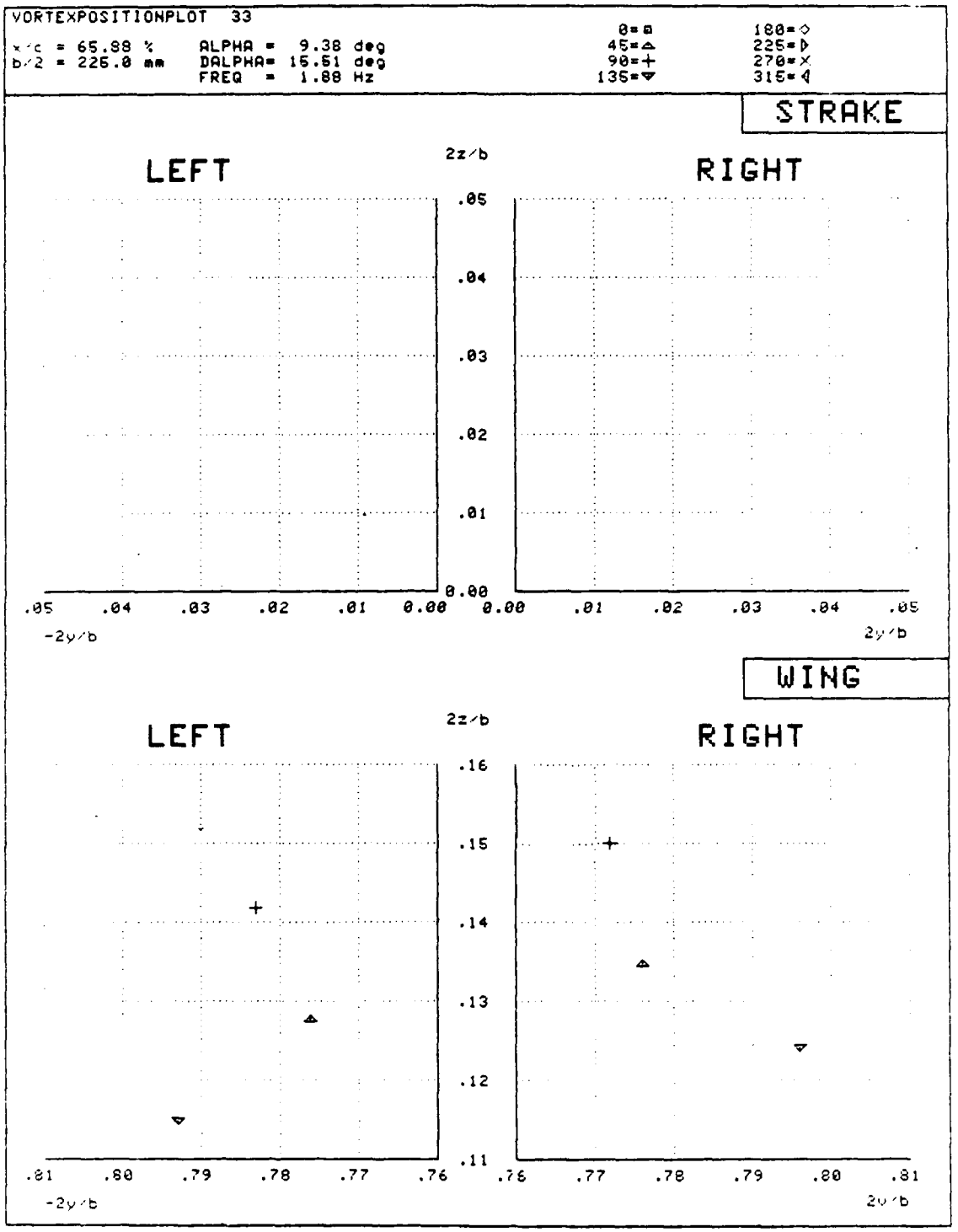

VORTEXPOSITIONPLOT 28
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 9.98 deg
DALPHA= 4.04 deg
FREQ = 1.13 Hz
0=
45=
90=+
135=
160=
225=
270=
315=
STRAKE
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00 0.00 .01 .02 .03 .04 .05
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.11
.10
.09
.08
.07
.06
.83 .82 .81 .80 .79 .78 .78 .79 .80 .81 .82 .83
-2y/b
2y/b

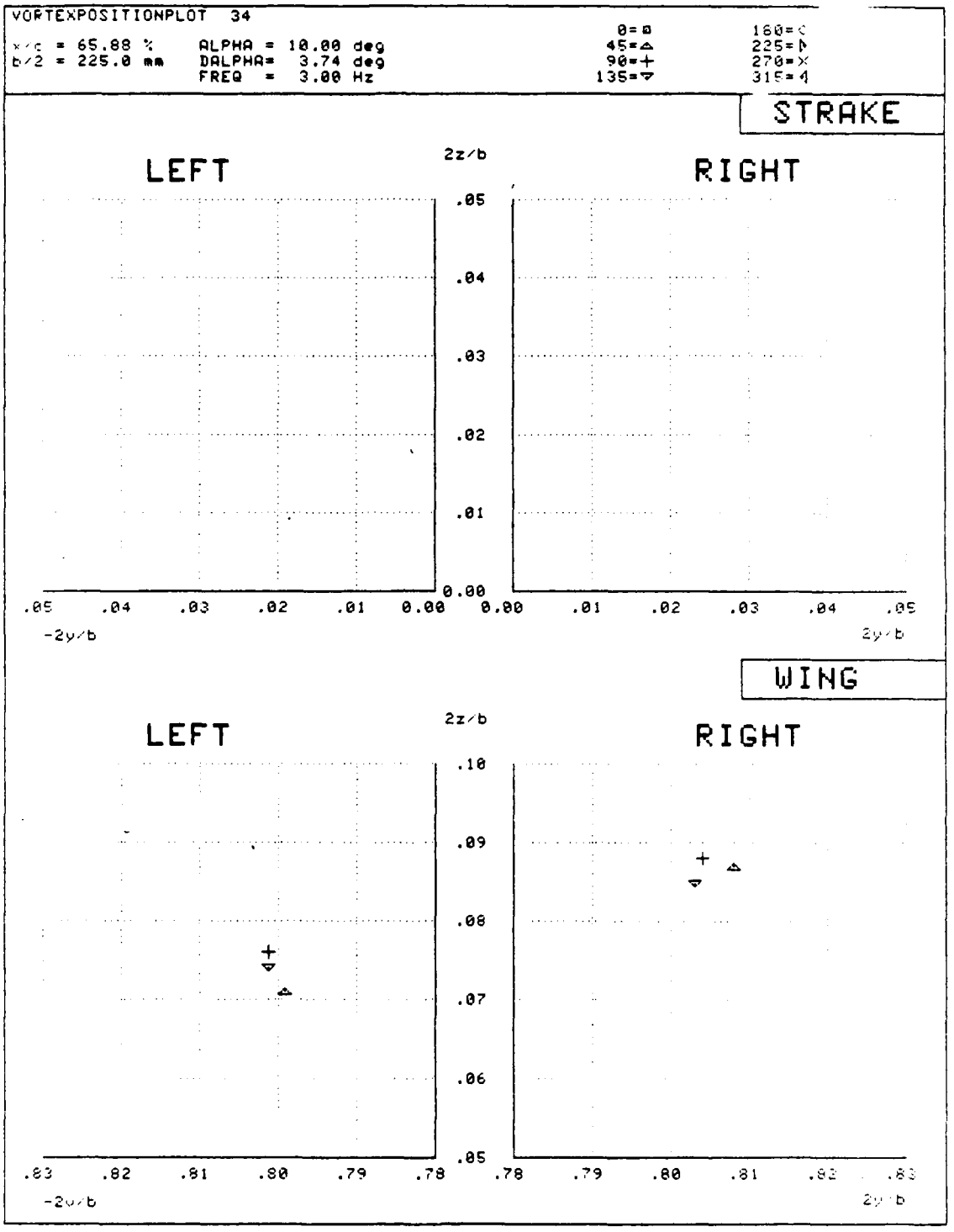

VORTEXPOSITIONPLOT 29
x/c = 65.98 %
b/2 = 225.0 mm
ALPHA = 9.87 deg
DALPHA= 8.11 deg
FREQ = 1.13 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
2z/b
RIGHT
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00 0.00 .01 .02 .03 .04 .05
-2y/b
2y/b
WING
LEFT
2z/b
RIGHT
.13
.12
.11
.10
.09
.08
.83 .82 .81 .80 .79 .78 .78 .79 .80 .81 .82 .83
-2y/b
2y/b

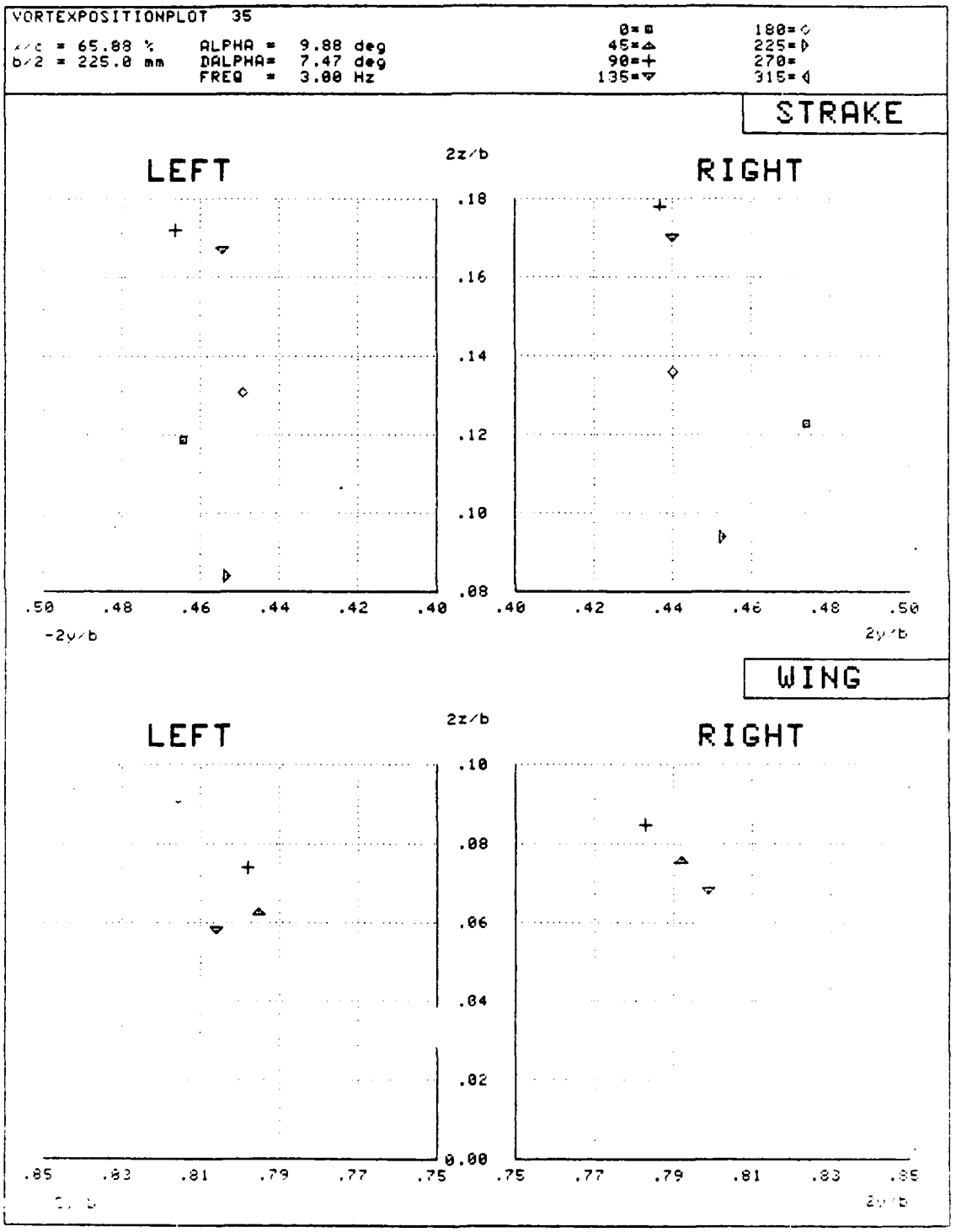

VORTEXPOSITIONPLOT 30
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 9.28 deg
DALPHA= 16.59 deg
FREQ = 1.13 Hz
0=
45=
90=+
135=
180=
225=
270=×
315=
STRAKE
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
WING
LEFT
RIGHT
2z/b
.15
.14
.13
.12
.11
.10
.83 .82 .81 .80 .79 .78
.78 .79 .80 .81 .82 .83

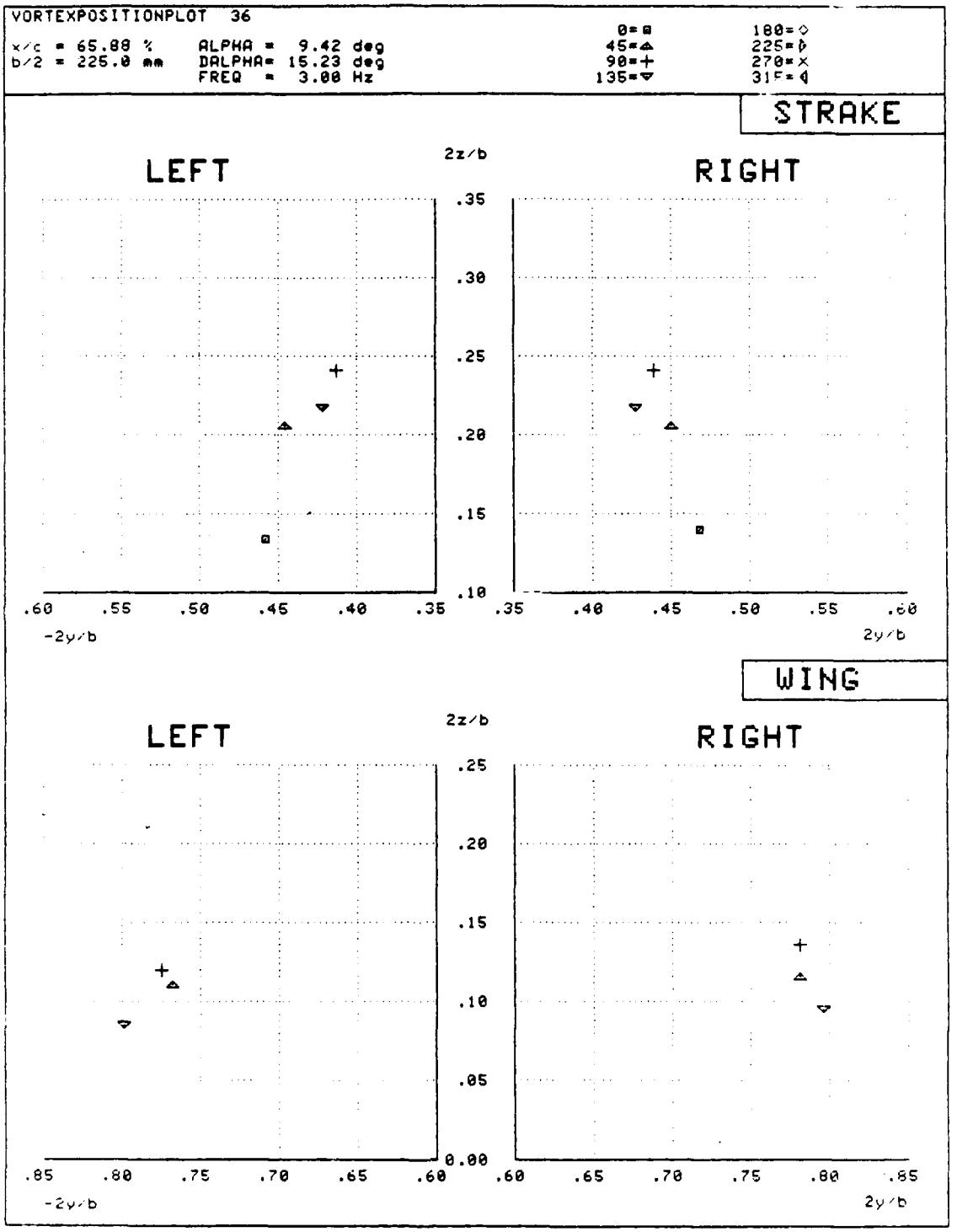

VORTEXPOSITIONPLOT 31
ALPHA = 10.01 deg
DALPHA= 3.78 deg
FREQ = 1.88 Hz
0=
45=
90=+
135=
180=
225=
270=x
315=
STRAKE
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
0.00
.01
.02
.03
.04
.05
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.11
.10
.09
.08
.07
.06
.83
.82
.81
.80
.79
.78
.78
.79
.80
.81
.82
.83
-2y/b
2y/b

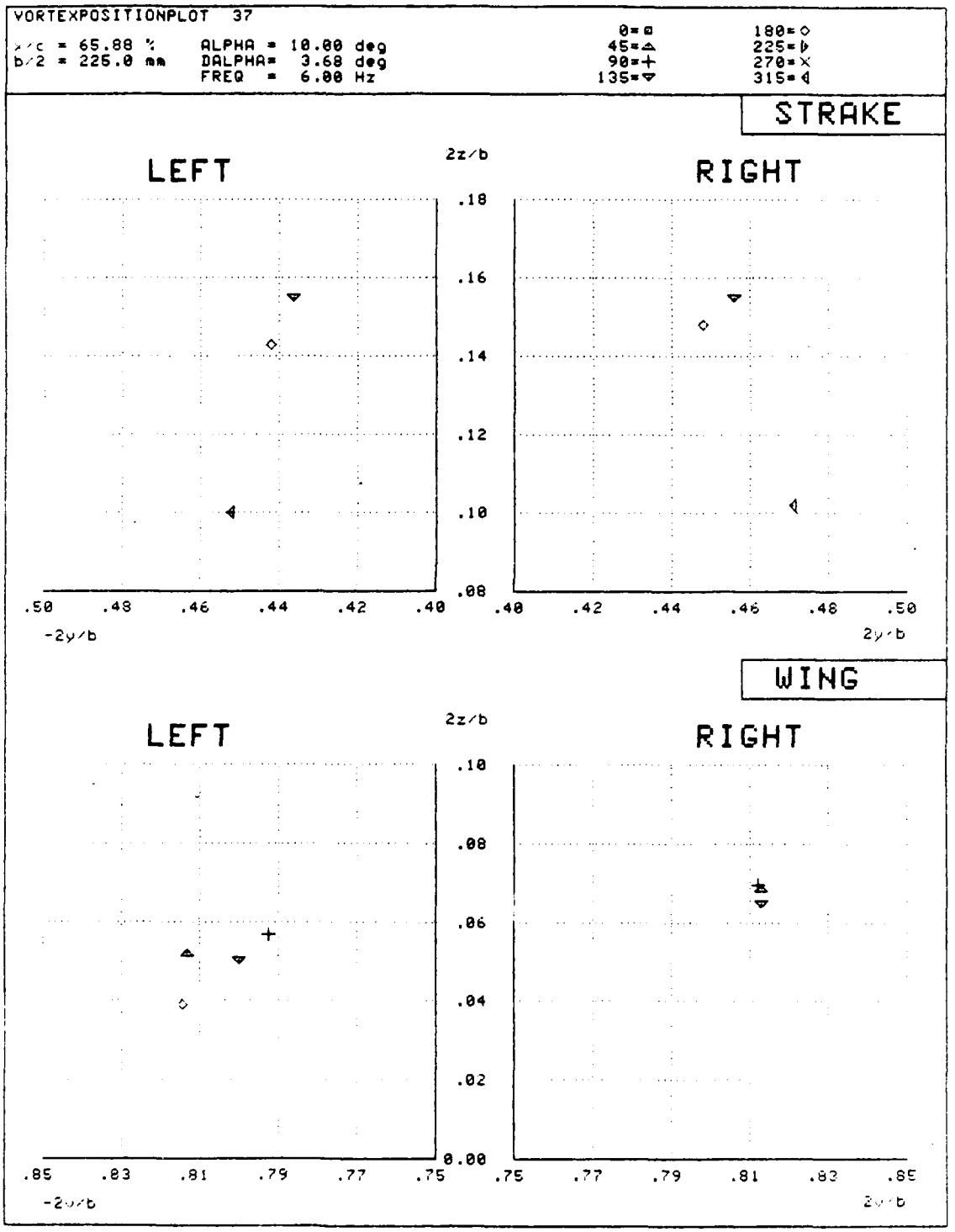

VORTEXPOSITIONPLOT 32
b/2 = 225.0 mm
ALPHA = 9.91 deg
DALPHA= 7.60 deg
FREQ = 1.88 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.13
.12
.11
.10
.09
.08
.83 .82 .81 .80 .79 .78
.78 .79 .80 .81 .82 .83
-2y/b
2y/b

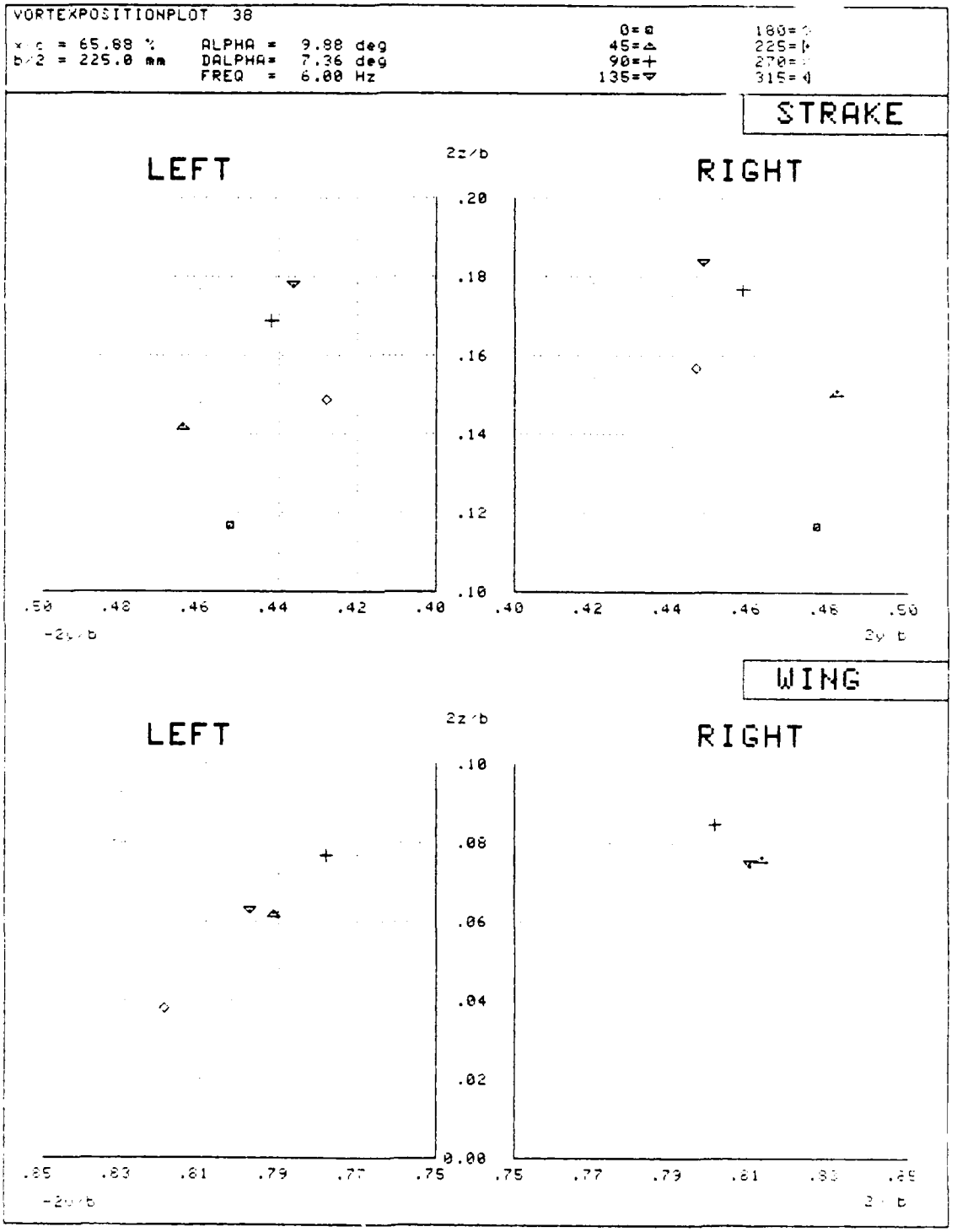

VORTEXPOSITIONPLOT 33
x/c = 65.88 %
b/2 = 226.0 mm
ALPHA = 9.38 deg
DALPHA= 15.51 deg
FREQ = 1.88 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.16
.15
.14
.13
.12
.11
.81 .80 .79 .78 .77 .76
.76 .77 .78 .79 .80 .81
-2y/b
2y/b

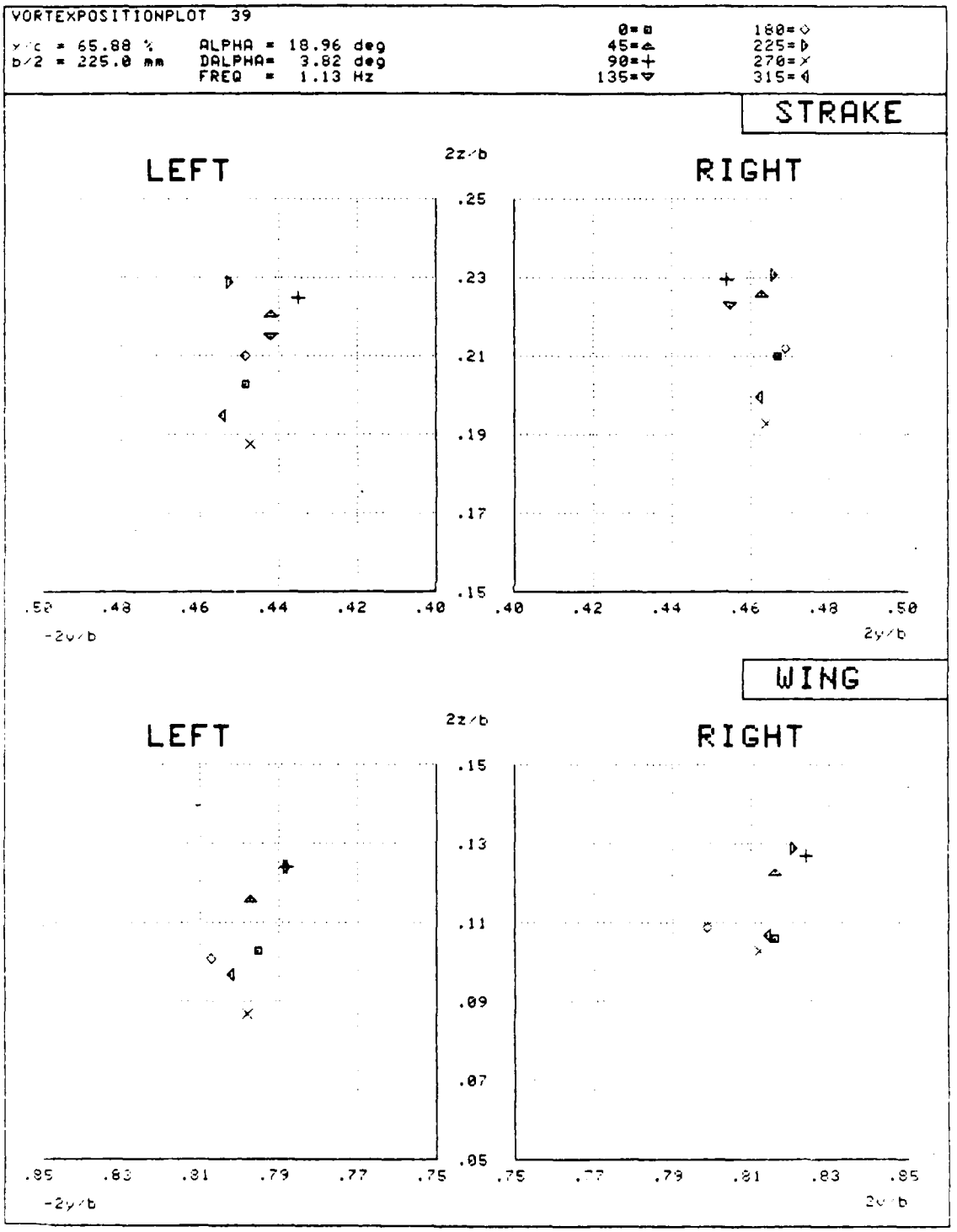

VORTEXPOSITIONPLOT 34
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 10.00 deg
DALPHA= 3.74 deg
FREQ = 3.00 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.10
.09
.08
.07
.06
.05
.83 .82 .81 .80 .79 .78
.78 .79 .80 .81 .82 .83
-2y/b
2y/b

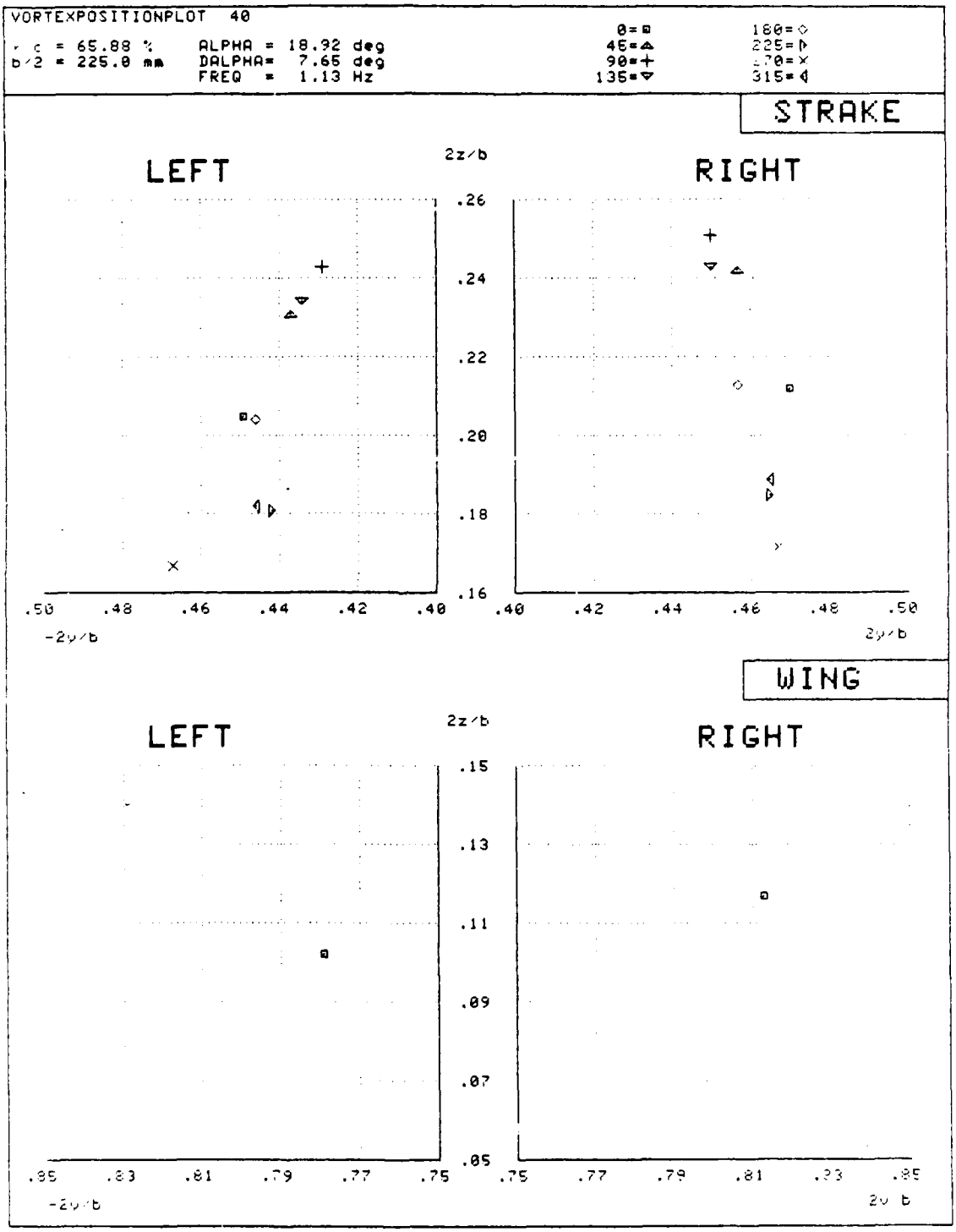

VORTEXPOSITIONPLOT 35
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 9.88 deg
DALPHA= 7.47 deg
FREQ = 3.00 Hz
0=
45=
90=+
135=
180=
225=
270=
315=
STRAKE
LEFT
RIGHT
2z/b
.18
.16
.14
.12
.10
.08
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
2y/b

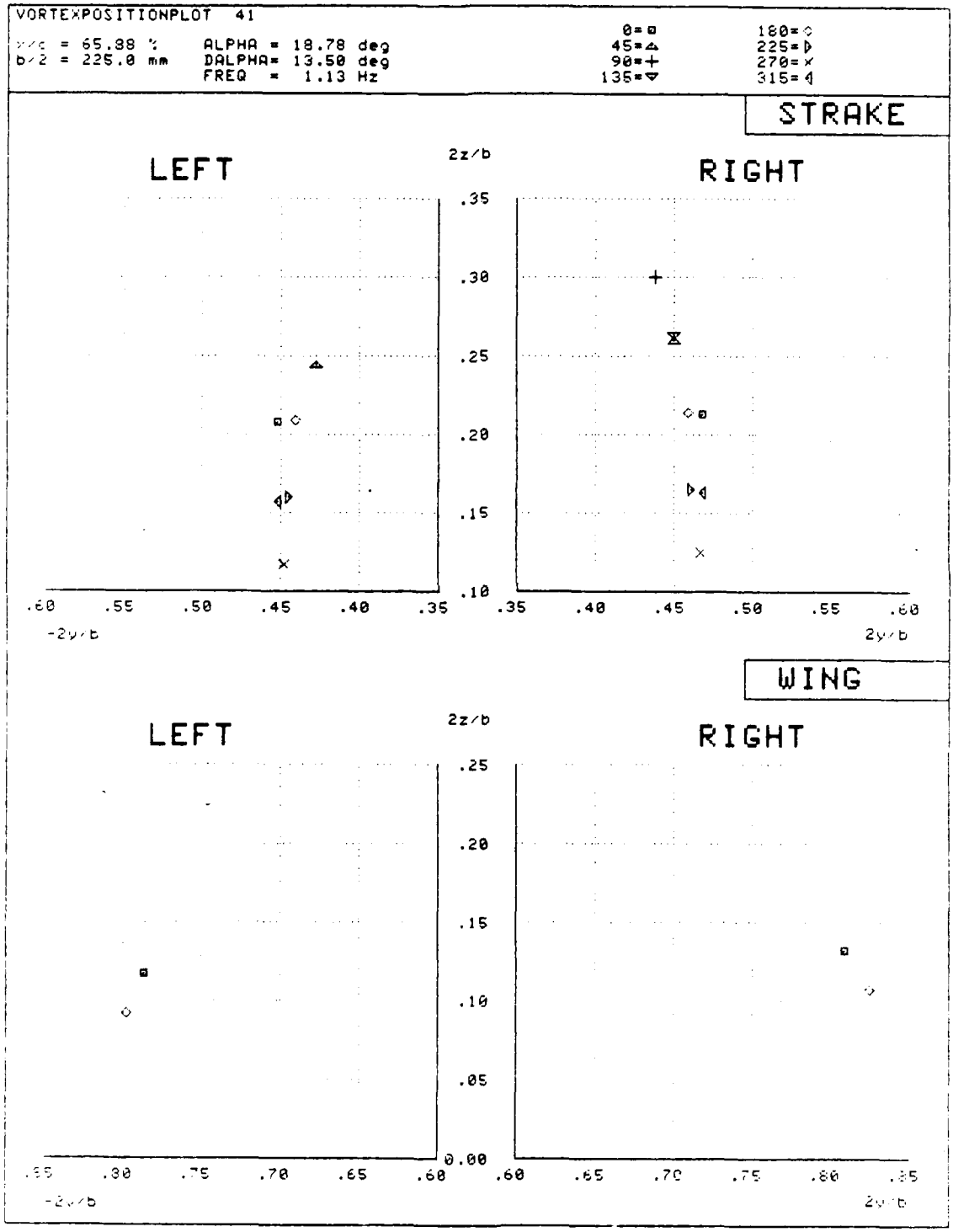

VORTEXPOSITIONPLOT 36
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 9.42 deg
DALPHA= 15.23 deg
FREQ = 3.00 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.35
.30
.25
.20
.15
.10
.60 .55 .50 .45 .40 .35
-2y/b
.35 .40 .45 .50 .55 .60
2y/b
WING
LEFT
RIGHT
2z/b
.25
.20
.15
.10
.05
0.00
.85 .80 .75 .70 .65 .60
-2y/b
.60 .65 .70 .75 .80 .85
2y/b

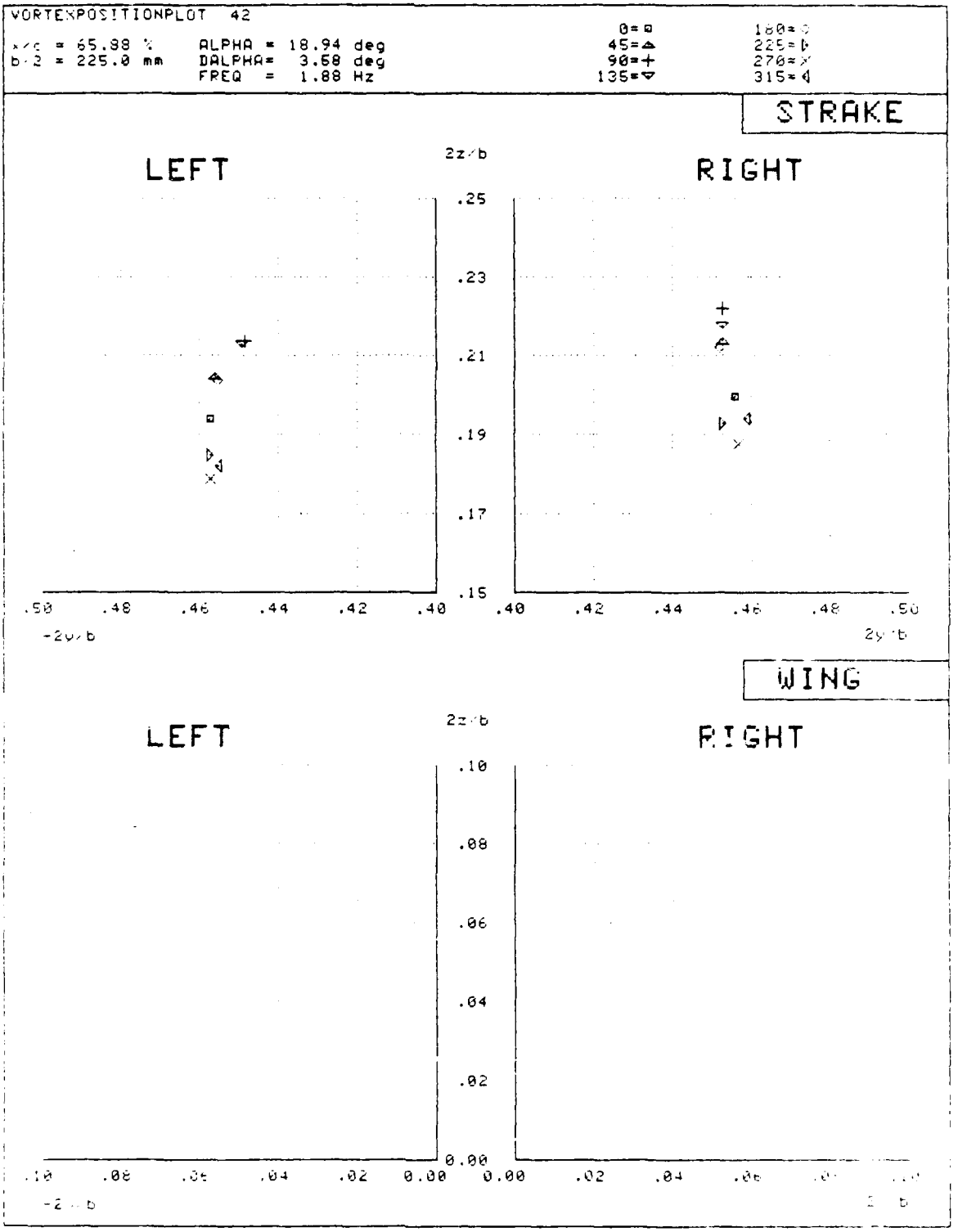

VORTEXPOSITIONPLOT 37
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 10.00 deg
DALPHA= 3.68 deg
FREQ = 6.00 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.18
.16
.14
.12
.10
.08
.50 .48 .46 .44 .42 .40
-2y/b
.40 .42 .44 .46 .48 .50
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.85 .83 .81 .79 .77 .75
-2y/b
.75 .77 .79 .81 .83 .85
2y/b

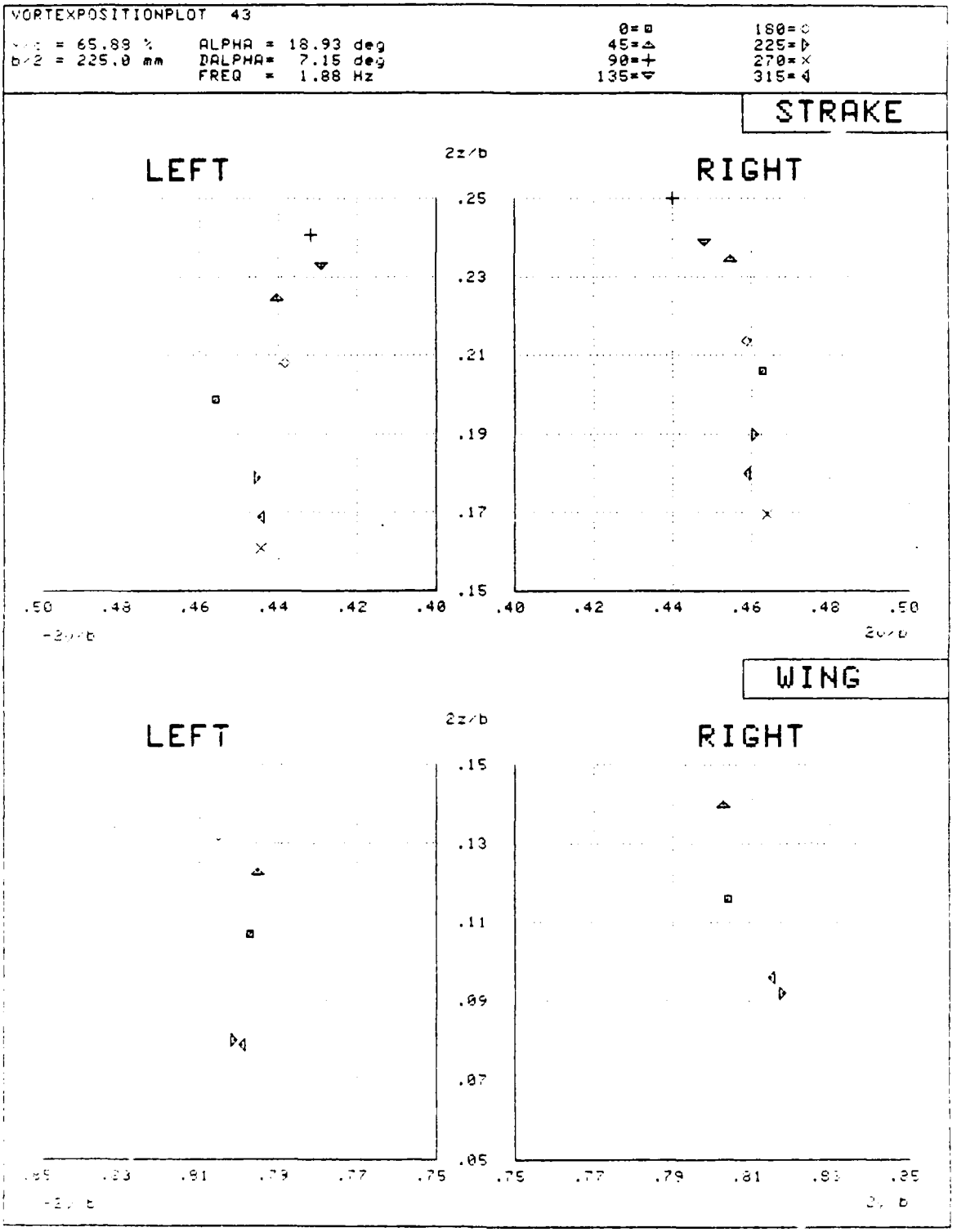

VORTEXPOSITIONPLOT 38
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 9.88 deg
DALPHA= 7.36 deg
FREQ = 6.00 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=○
315=◁
STRAKE
LEFT
RIGHT
2z/b
.20
.18
.16
.14
.12
.10
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

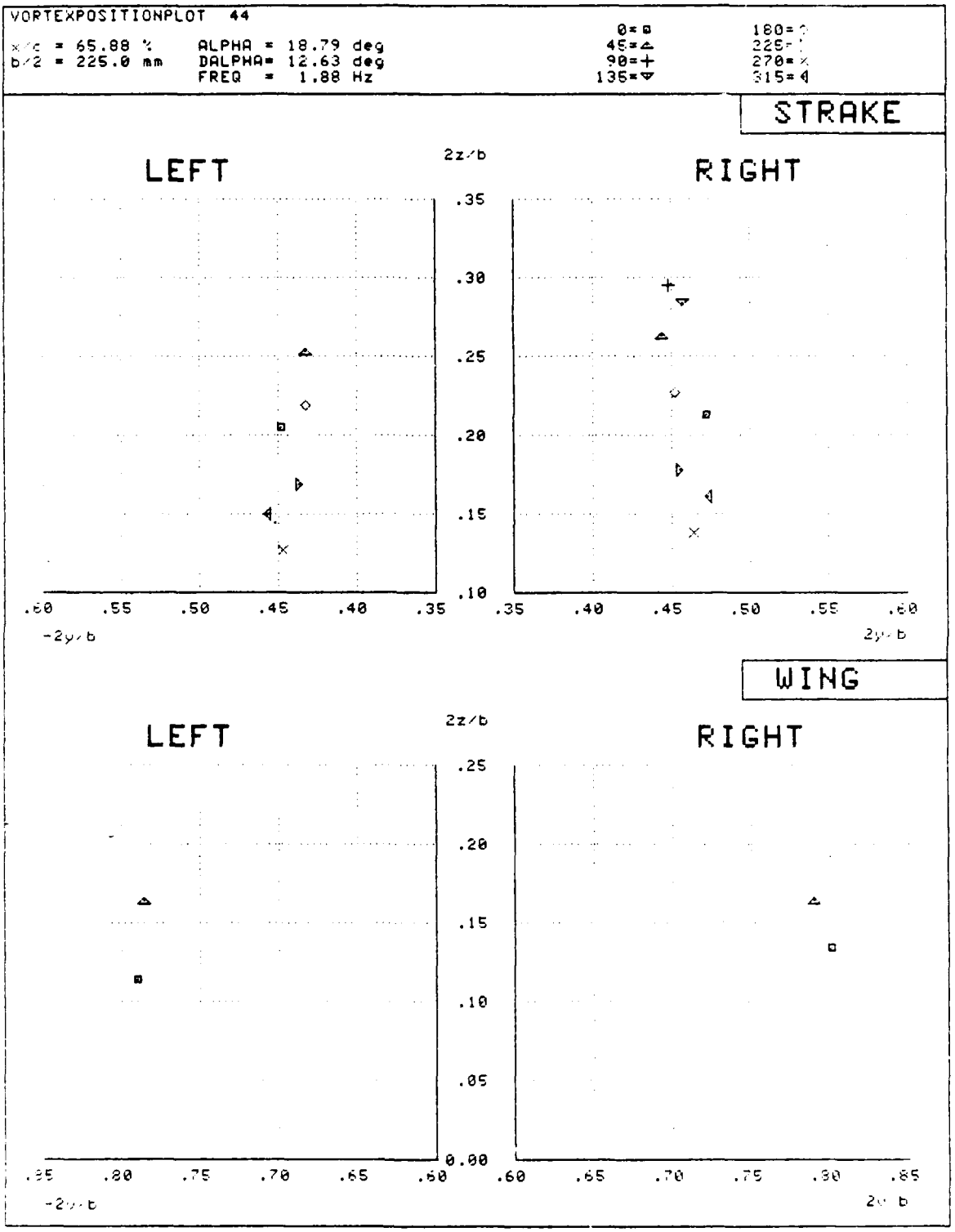

VORTEXPOSITIONPLOT 39
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 18.96 deg
DALPHA= 3.82 deg
FREQ = 1.13 Hz
0=
45=
90=+
135=
180=
225=
270=×
315=
STRAKE
LEFT
RIGHT
2z/b
.25
.23
.21
.19
.17
.15
.50 .48 .46 .44 .42 .40
-2y/b
.40 .42 .44 .46 .48 .50
2y/b
WING
LEFT
RIGHT
2z/b
.15
.13
.11
.09
.07
.05
.85 .83 .81 .79 .77 .75
-2y/b
.75 .77 .79 .81 .83 .85
2y/b

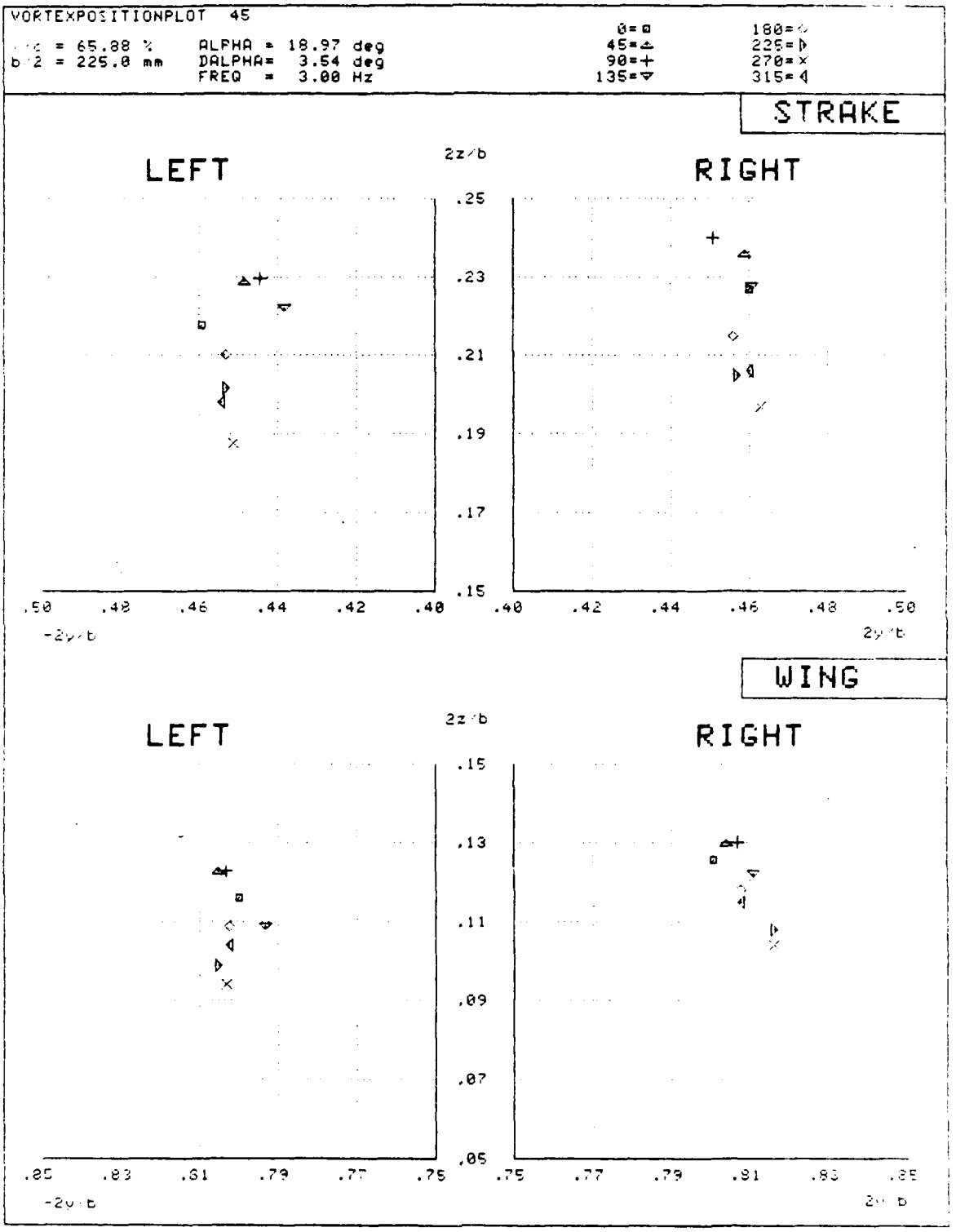

VORTEXPOSITIONPLOT 40
r_c = 65.88 %
b/2 = 225.8 mm
ALPHA = 18.92 deg
DALPHA= 7.65 deg
FREQ = 1.13 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.26
.24
.22
.20
.18
.16
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.15
.13
.11
.09
.07
.05
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

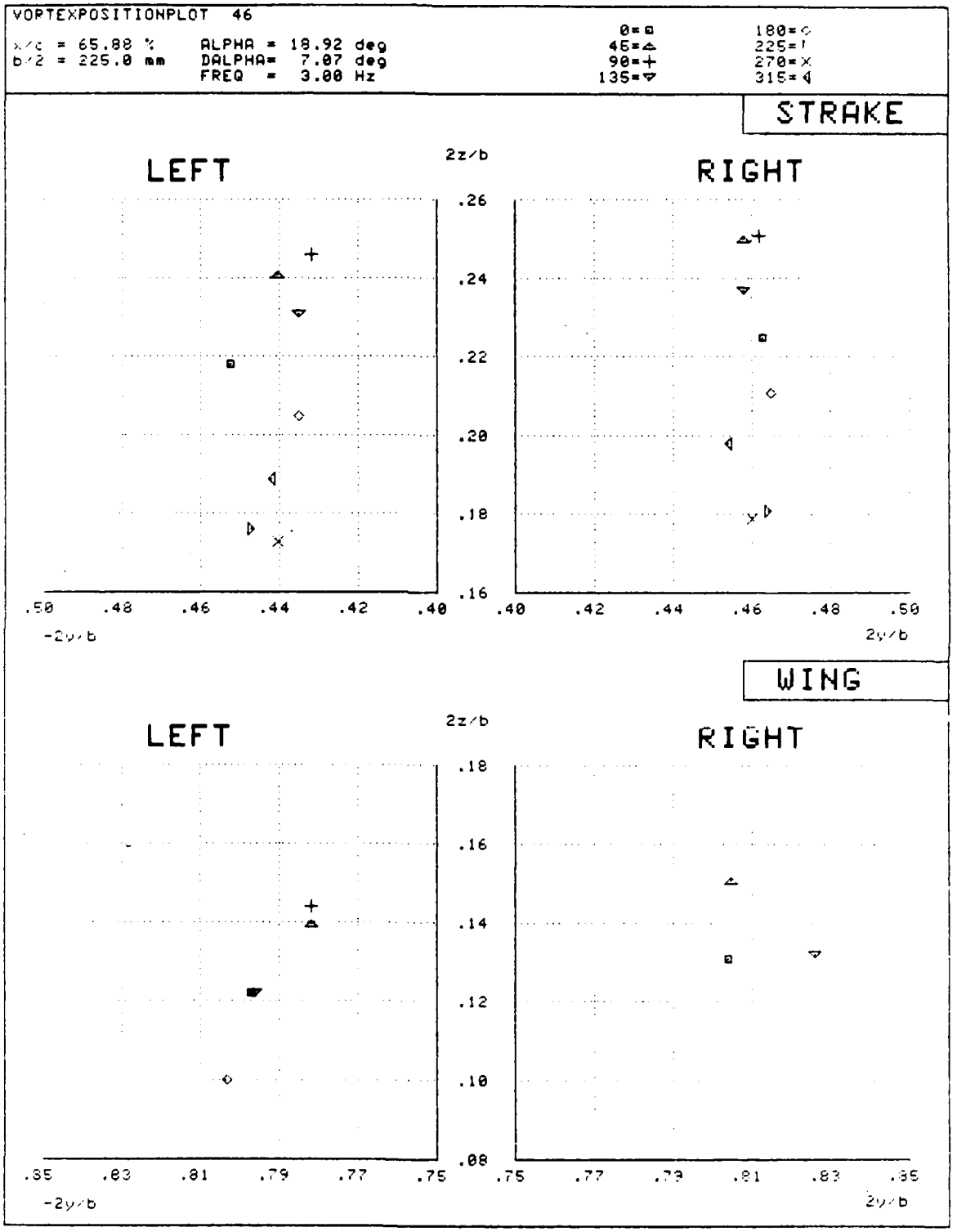

VORTEXPOSITIONPLOT 41
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 18.78 deg
DALPHA= 13.50 deg
FREQ = 1.13 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.35
.30
.25
.20
.15
.10
.60 .55 .50 .45 .40 .35
.35 .40 .45 .50 .55 .60
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.25
.20
.15
.10
.05
0.00
.60 .65 .70 .75 .80 .85
-2y/b
2y/b

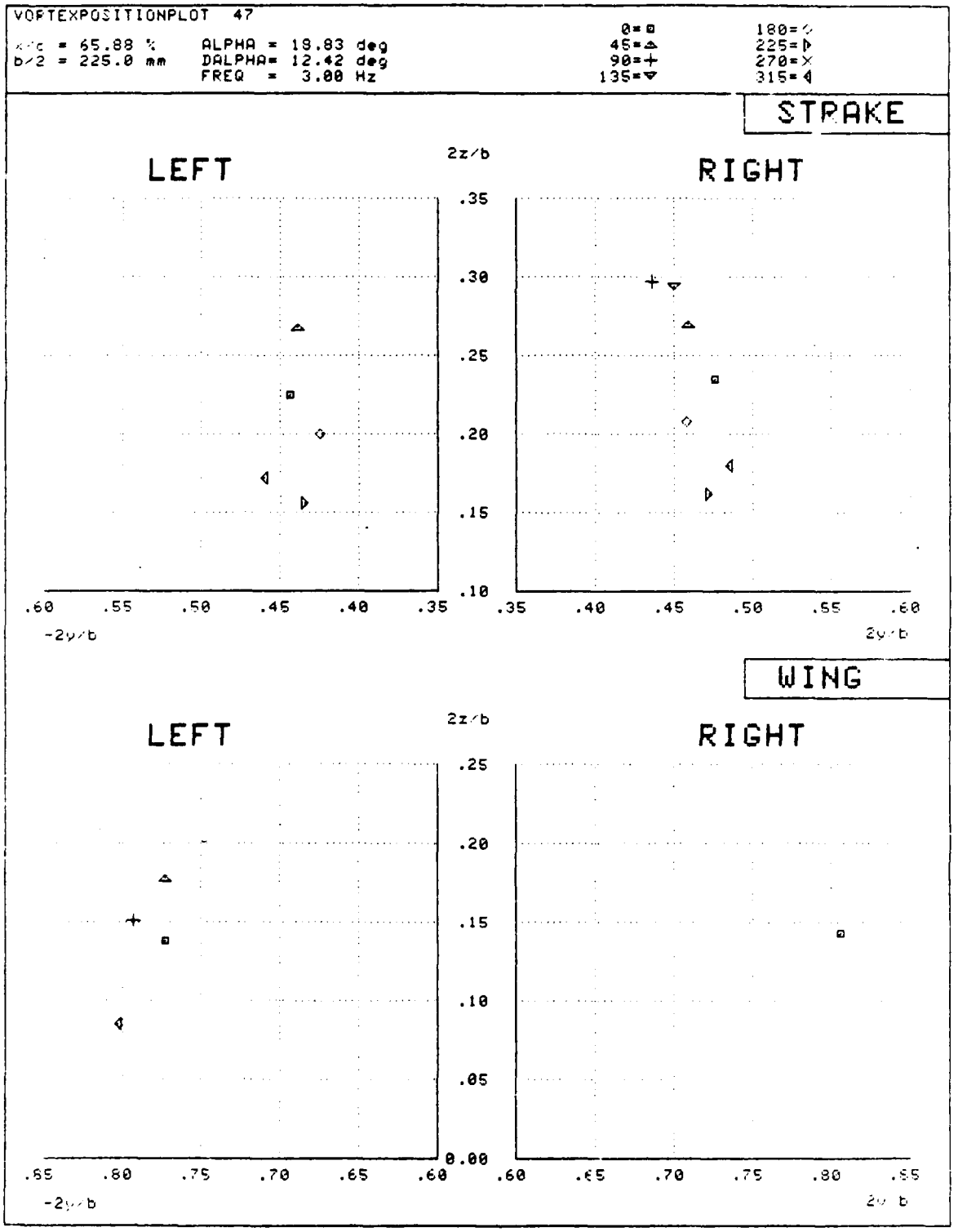

VORTEXPOSITIONPLOT 42
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 18.94 deg
DALPHA= 3.58 deg
FREQ = 1.88 Hz
0=
45=
90=+
135=
180=
225=
270=
315=
STRAKE
LEFT
RIGHT
2z/b
.25
.23
.21
.19
.17
.15
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.10
.08
.06
.04
.02
0.00
.10 .08 .06 .04 .02 0.00
0.00 .02 .04 .06
-2y/b
2y/b

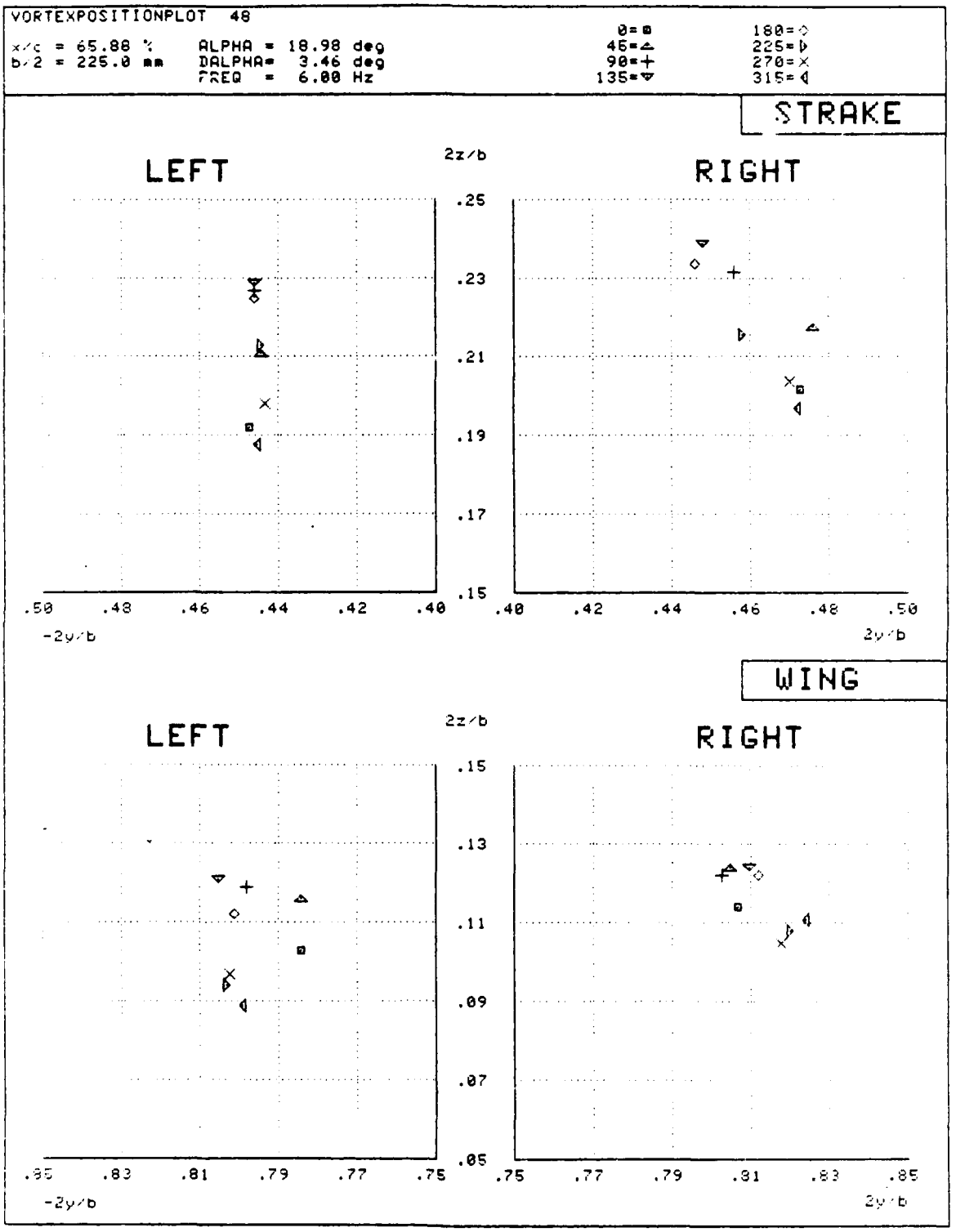

VORTEXPOSITIONPLOT 43
ALPHA = 18.93 deg
DALPHA= 7.15 deg
FREQ = 1.88 Hz
0=□ 180=○
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.25
.23
.21
.19
.17
.15
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
WING
LEFT
RIGHT
2z/b
.15
.13
.11
.09
.07
.05
.75 .77 .79 .81 .83 .85

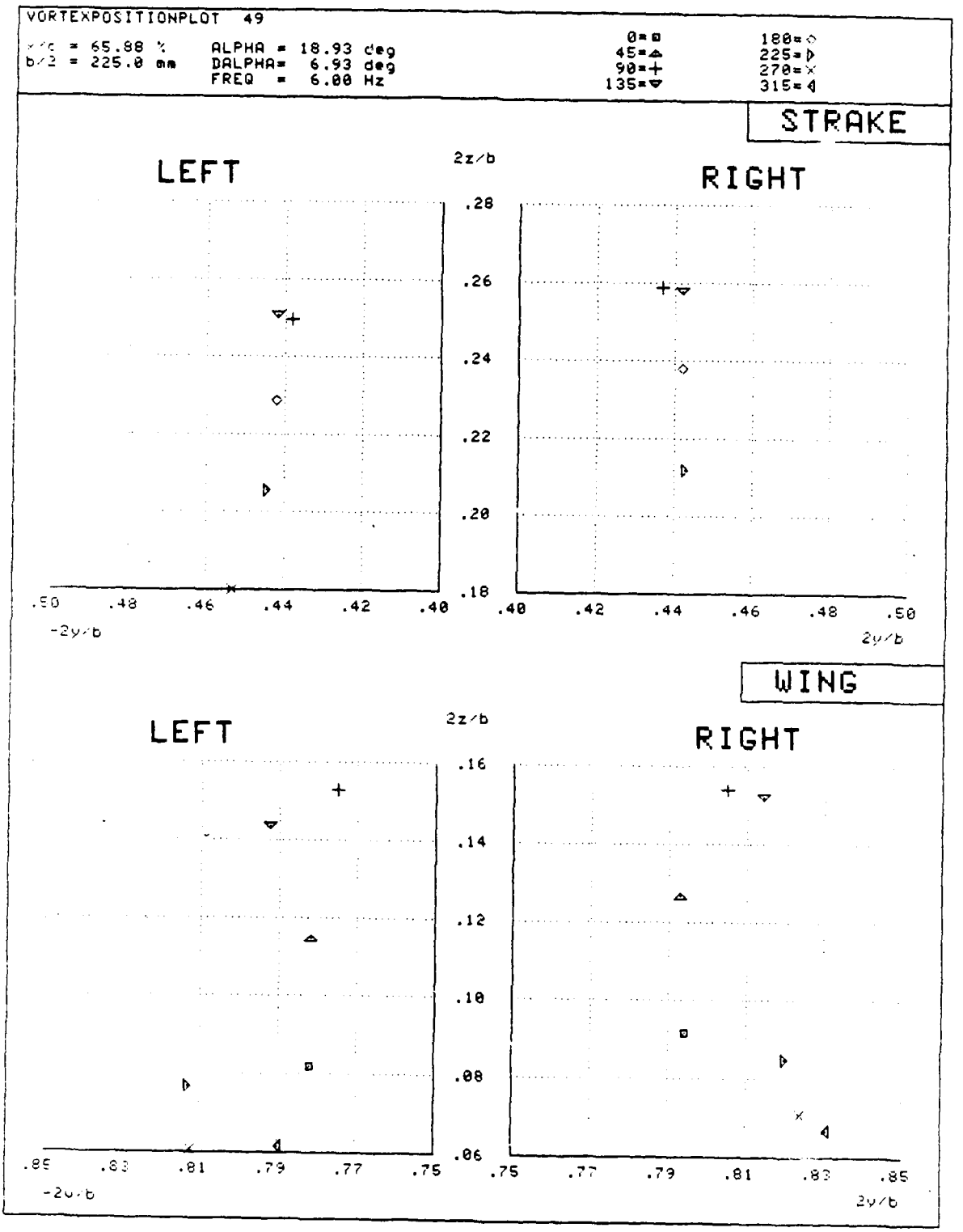

VORTEXPOSITIONPLOT 44
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 18.79 deg
DALPHA= 12.63 deg
FREQ = 1.88 Hz
0=
45=
90=+
135=
180=
225=
270=×
315=
STRAKE
LEFT
RIGHT
2z/b
.35
.30
.25
.20
.15
.10
.60 .55 .50 .45 .40 .35
.35 .40 .45 .50 .55 .60
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.25
.20
.15
.10
.05
0.00
.85 .80 .75 .70 .65 .60
.60 .65 .70 .75 .80 .85
-2y/b
2y/b

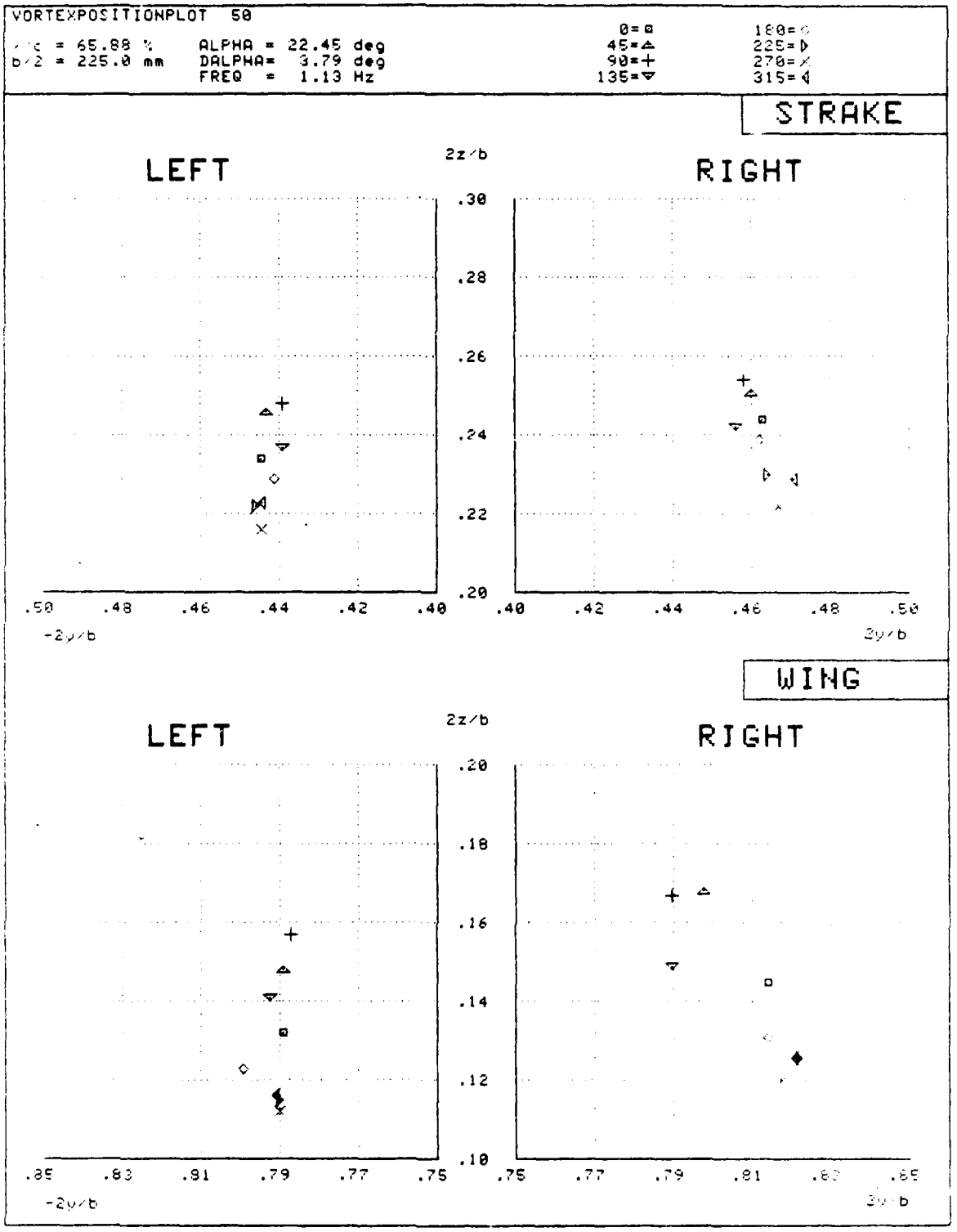

VORTEXPOSITIONPLOT 45
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 18.97 deg
DALPHA= 3.54 deg
FREQ = 3.00 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.25
.23
.21
.19
.17
.15
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.15
.13
.11
.09
.07
.05
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

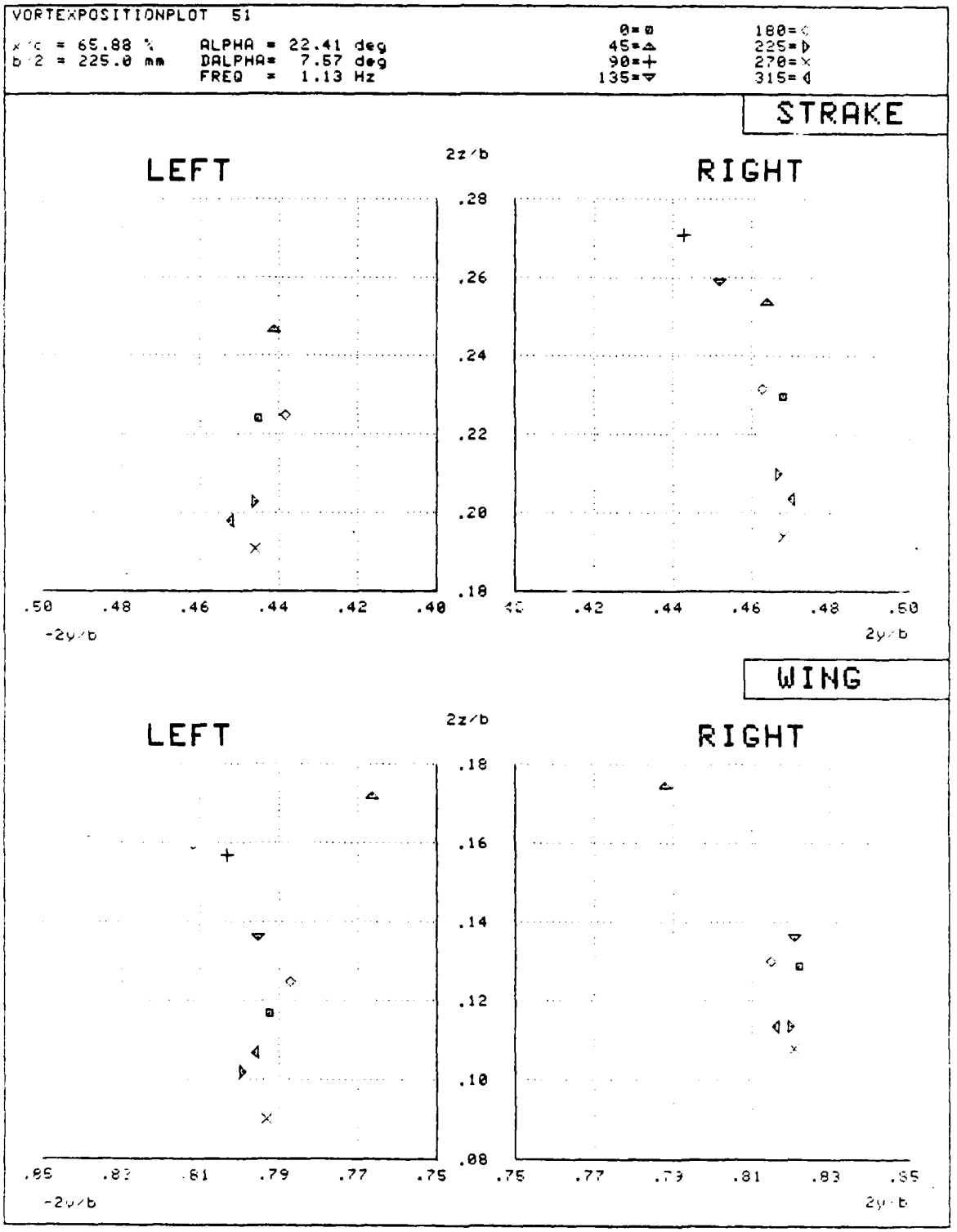

VORTEXPOSITIONPLOT 46
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 18.92 deg
DALPHA= 7.07 deg
FREQ = 3.00 Hz
0=□ 180=◇
45=△ 225=!
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.26
.24
.22
.20
.18
.16
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.18
.16
.14
.12
.10
.08
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

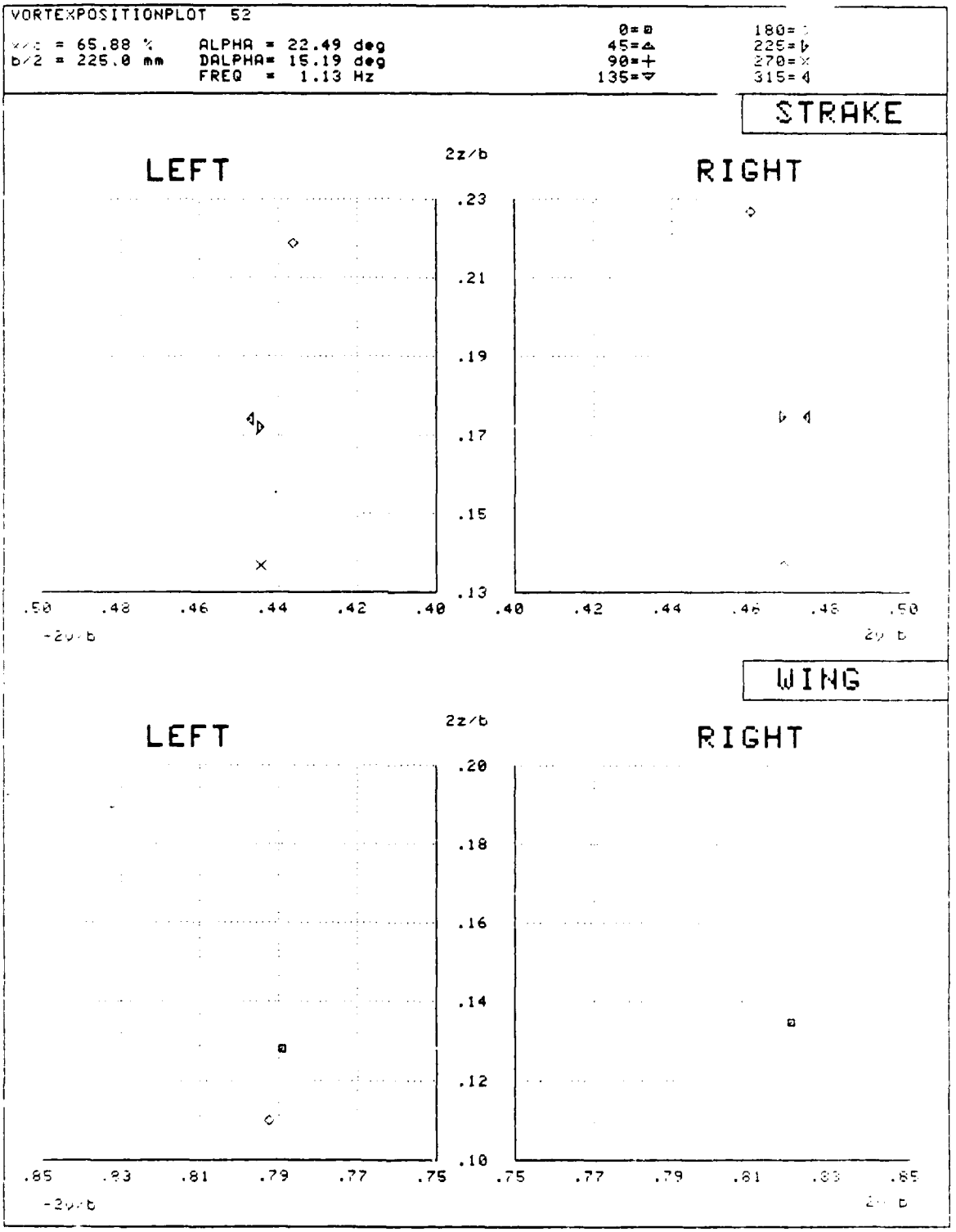

VORTEXPOSITIONPLOT 47
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 19.83 deg
DALPHA= 12.42 deg
FREQ = 3.00 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.35
.30
.25
.20
.15
.10
.60 .55 .50 .45 .40 .35
-2y/b
.35 .40 .45 .50 .55 .60
2y/b
WING
LEFT
RIGHT
2z/b
.25
.20
.15
.10
.05
0.00
.65 .60 .75 .70 .65 .60
-2y/b
.60 .65 .70 .75 .80 .85
2y/b

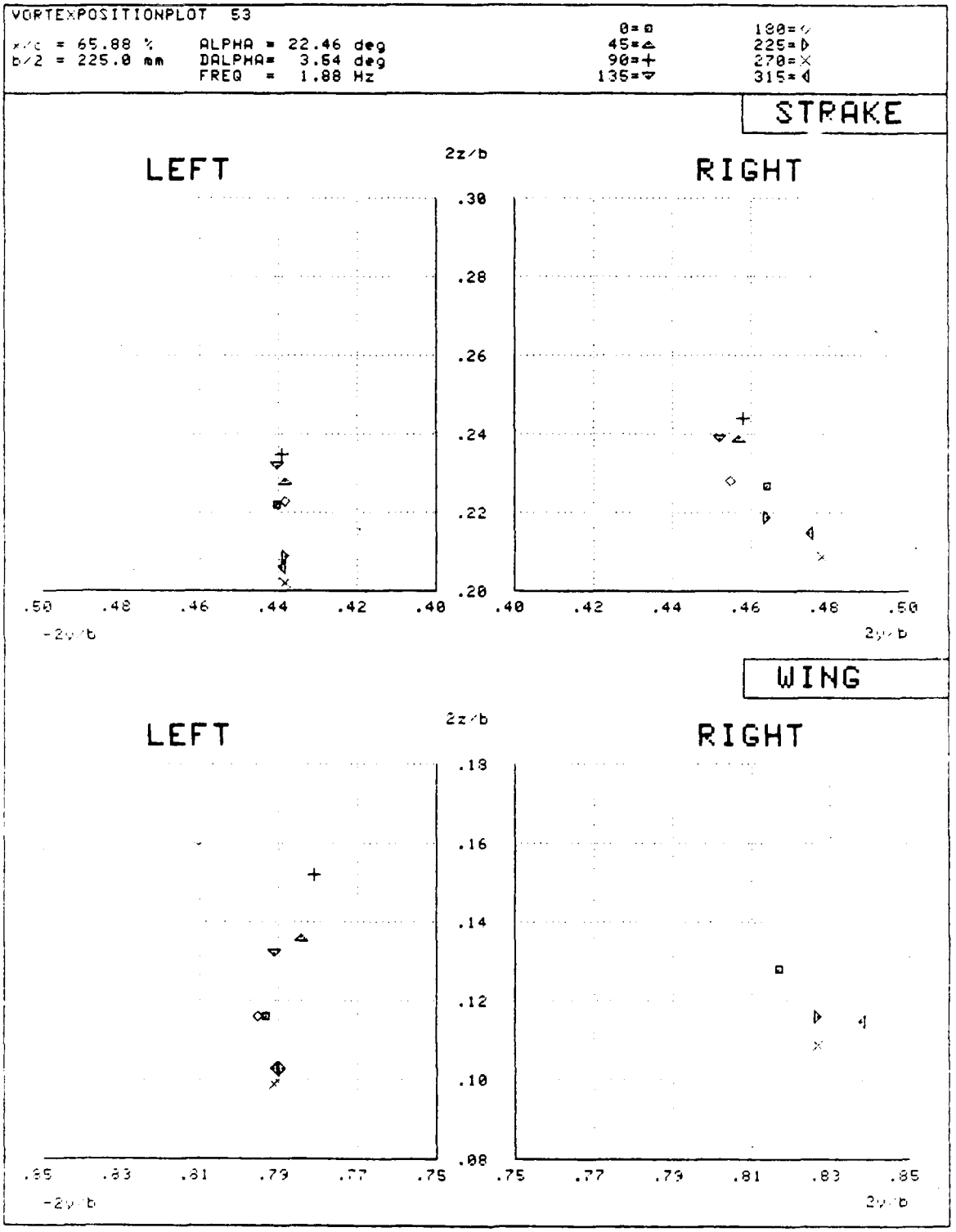

VORTEXPOSITIONPLOT 48
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 18.98 deg
DALPHA= 3.46 deg
FREQ = 6.00 Hz
0=
45=
90=+
135=
180=
225=
270=×
315=
STRAKE
LEFT
RIGHT
2z/b
.25
.23
.21
.19
.17
.15
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.15
.13
.11
.09
.07
.05
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

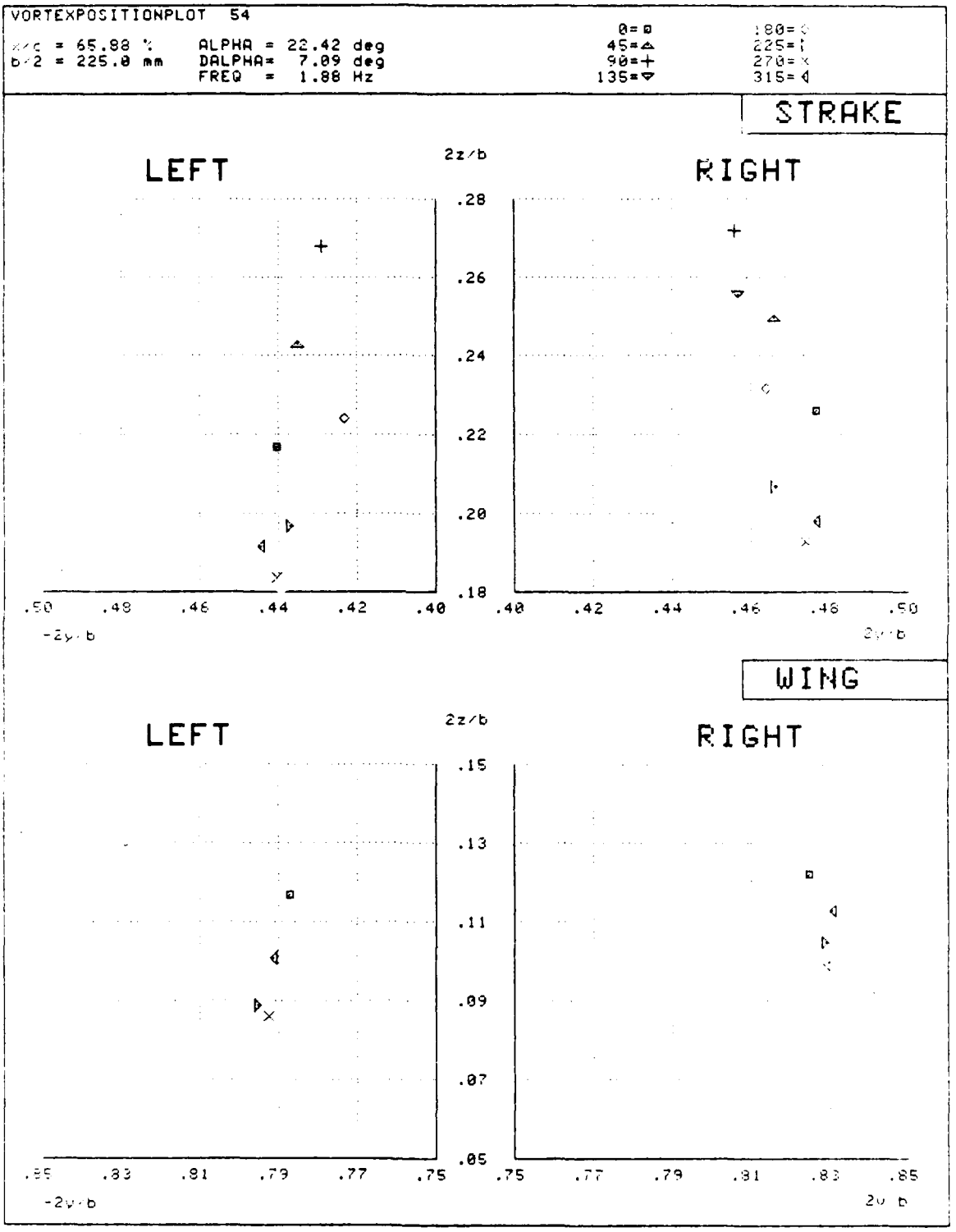

VORTEXPOSITIONPLOT 49
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 18.93 deg
DALPHA= 6.93 deg
FREQ = 6.00 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.28
.26
.24
.22
.20
.18
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.16
.14
.12
.10
.08
.06
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

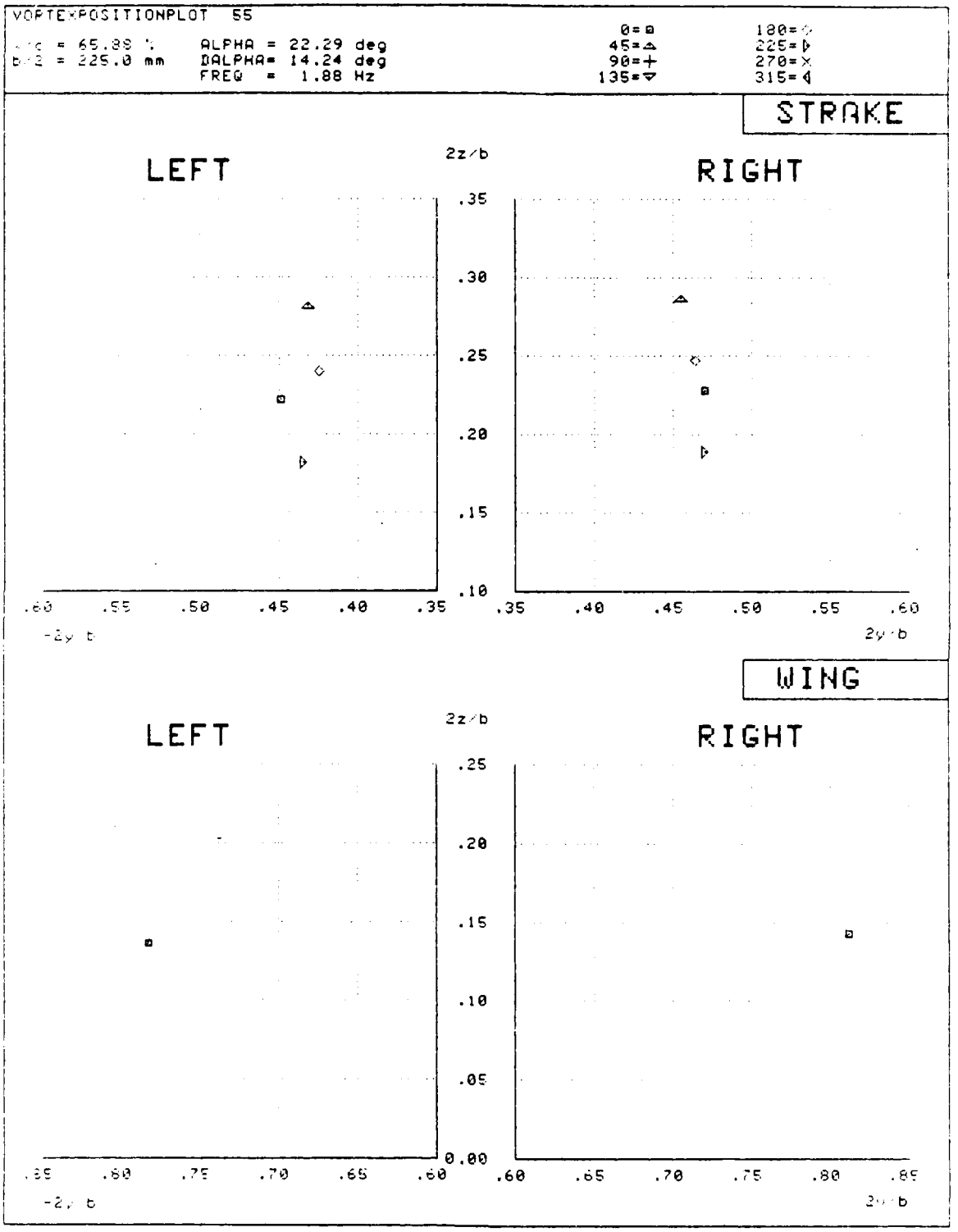

VORTEXPOSITIONPLOT 50
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 22.45 deg
DALPHA= 3.79 deg
FREQ = 1.13 Hz
0=□
45=△
90=+
135=▽
180=○
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.30
.28
.26
.24
.22
.20
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.20
.18
.16
.14
.12
.10
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

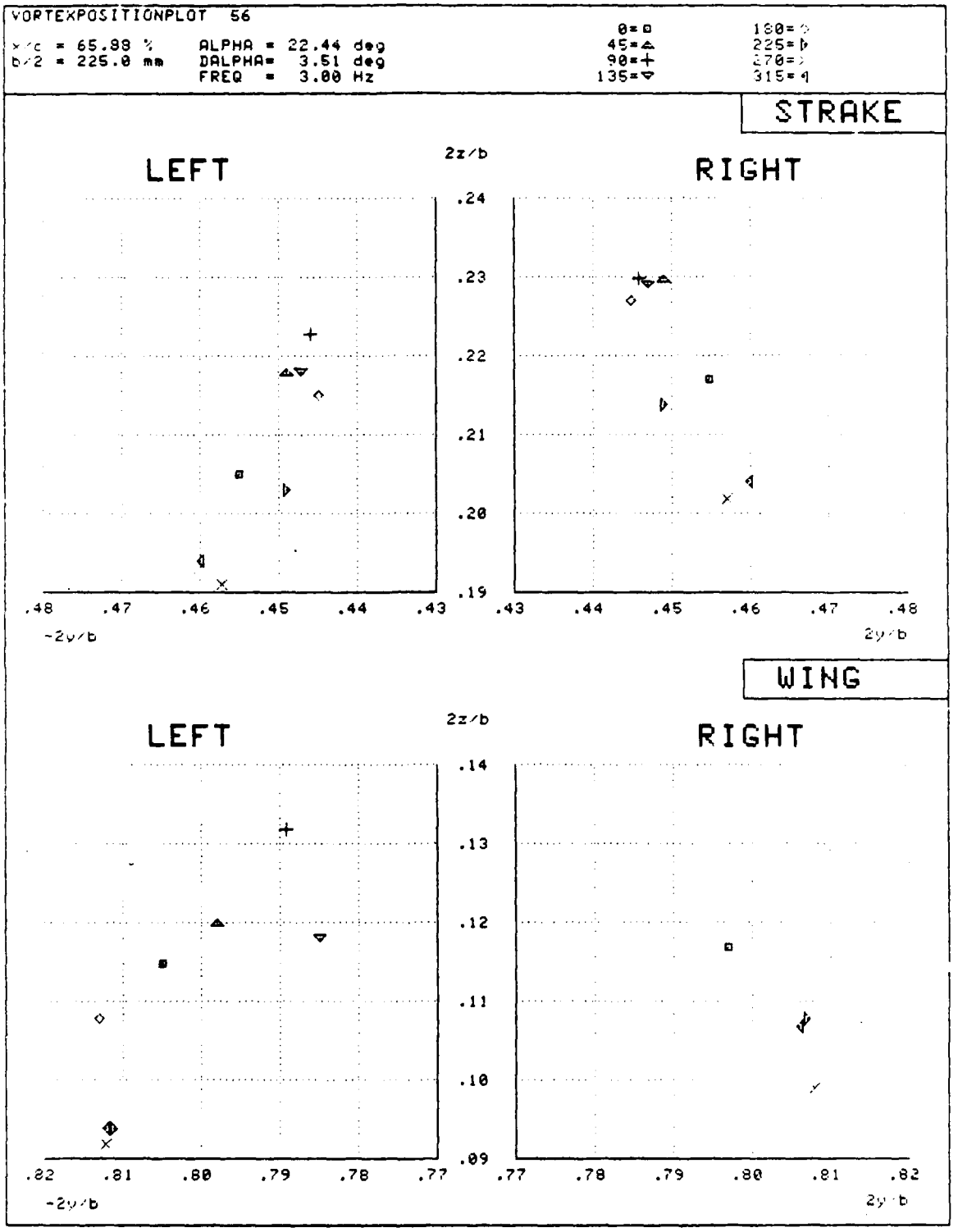

VORTEXPOSITIONPLOT 51
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 22.41 deg
DALPHA= 7.57 deg
FREQ = 1.13 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.28
.26
.24
.22
.20
.18
.50 .48 .46 .44 .42 .40
-2y/b
.42 .44 .46 .48 .50
2y/b
WING
LEFT
RIGHT
2z/b
.18
.16
.14
.12
.10
.08
.85 .83 .81 .79 .77 .75
-2y/b
.75 .77 .79 .81 .83 .85
2y/b

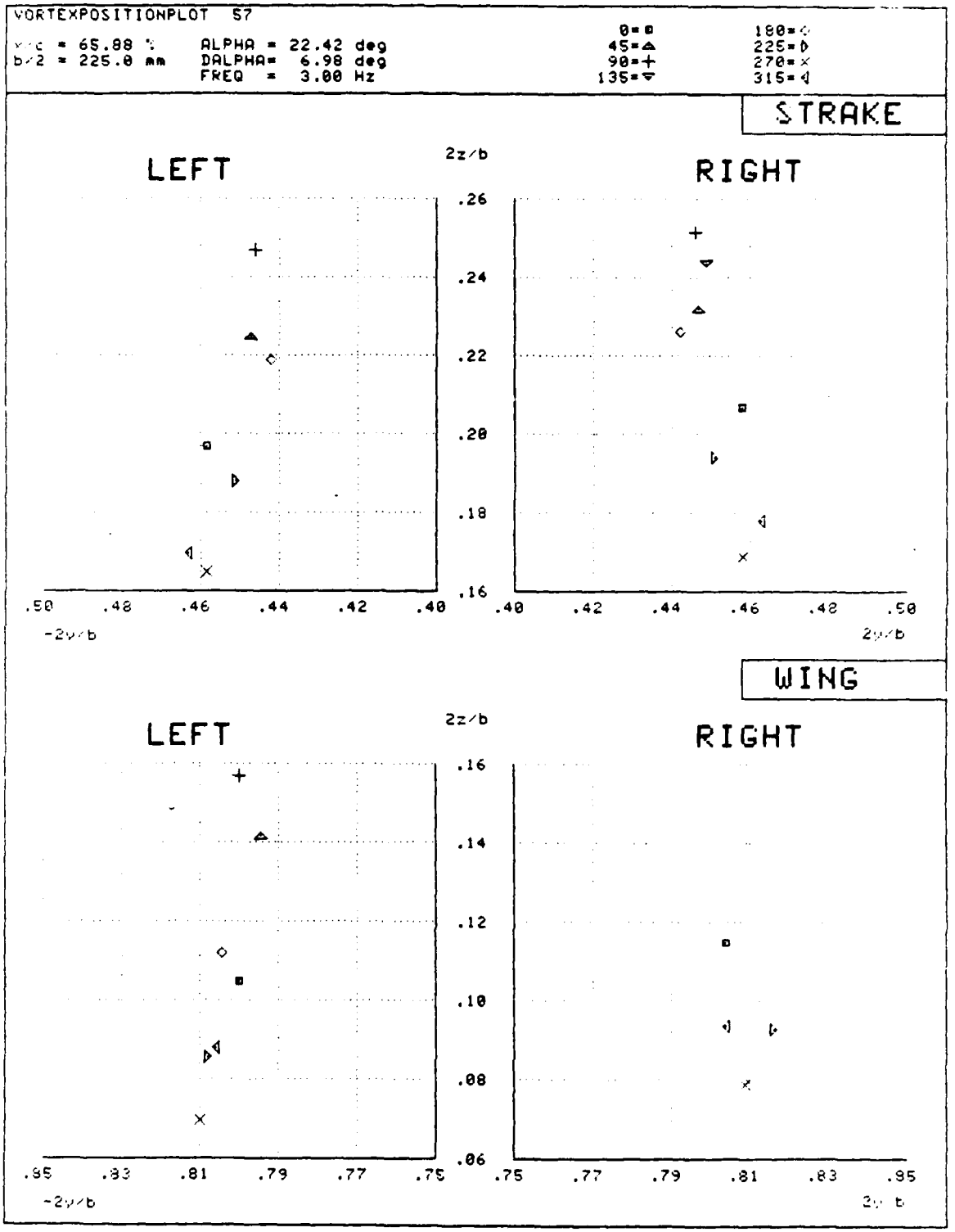

VORTEXPOSITIONPLOT 52
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 22.49 deg
DALPHA= 15.19 deg
FREQ = 1.13 Hz
0=
45=
90=+
135=
180=
225=
270=×
315=
STRAKE
LEFT
RIGHT
2z/b
.23
.21
.19
.17
.15
.13
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.20
.18
.16
.14
.12
.10
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

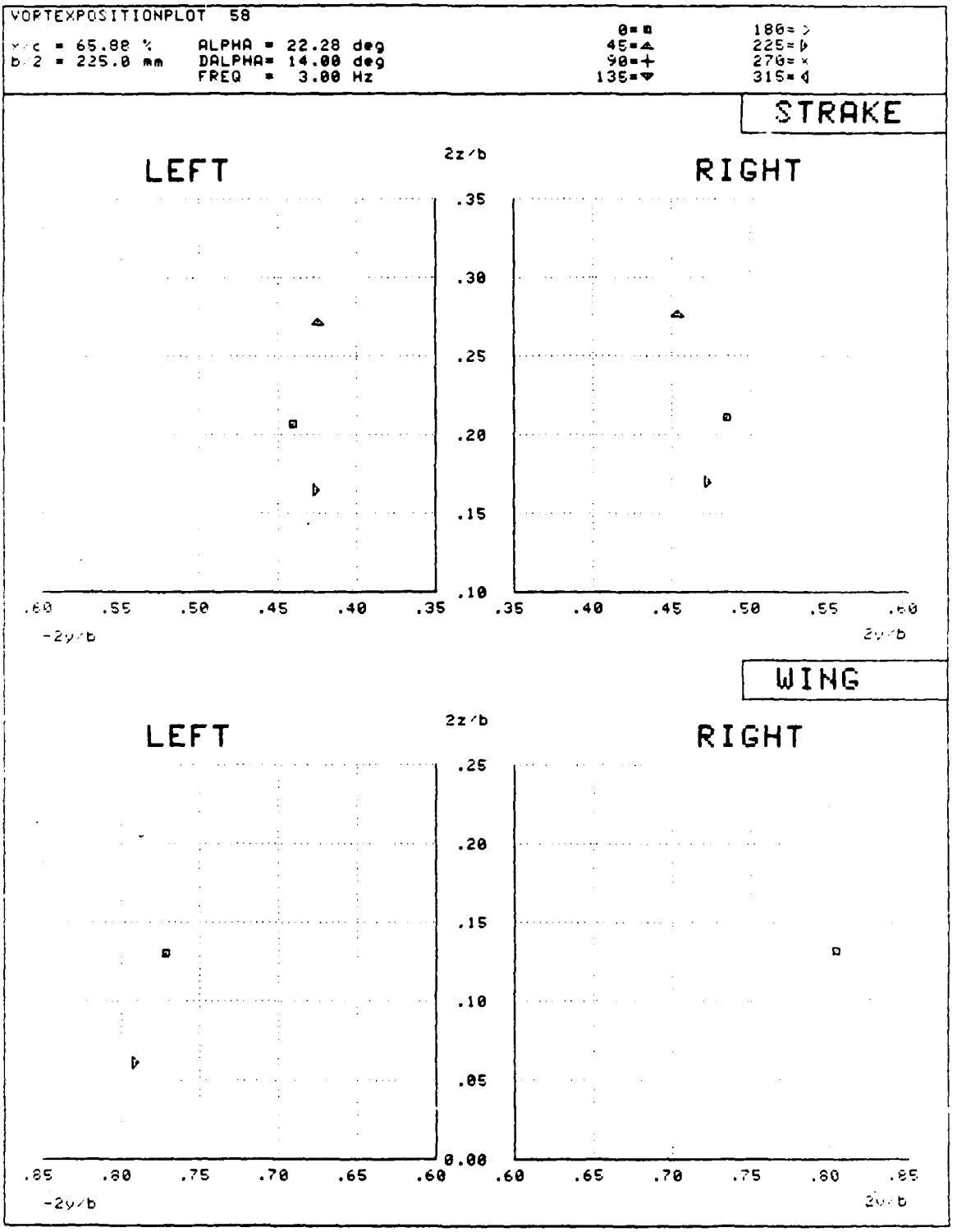

VORTEXPOSITIONPLOT 53
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 22.46 deg
DALPHA= 3.54 deg
FREQ = 1.88 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.30
.28
.26
.24
.22
.20
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.18
.16
.14
.12
.10
.08
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

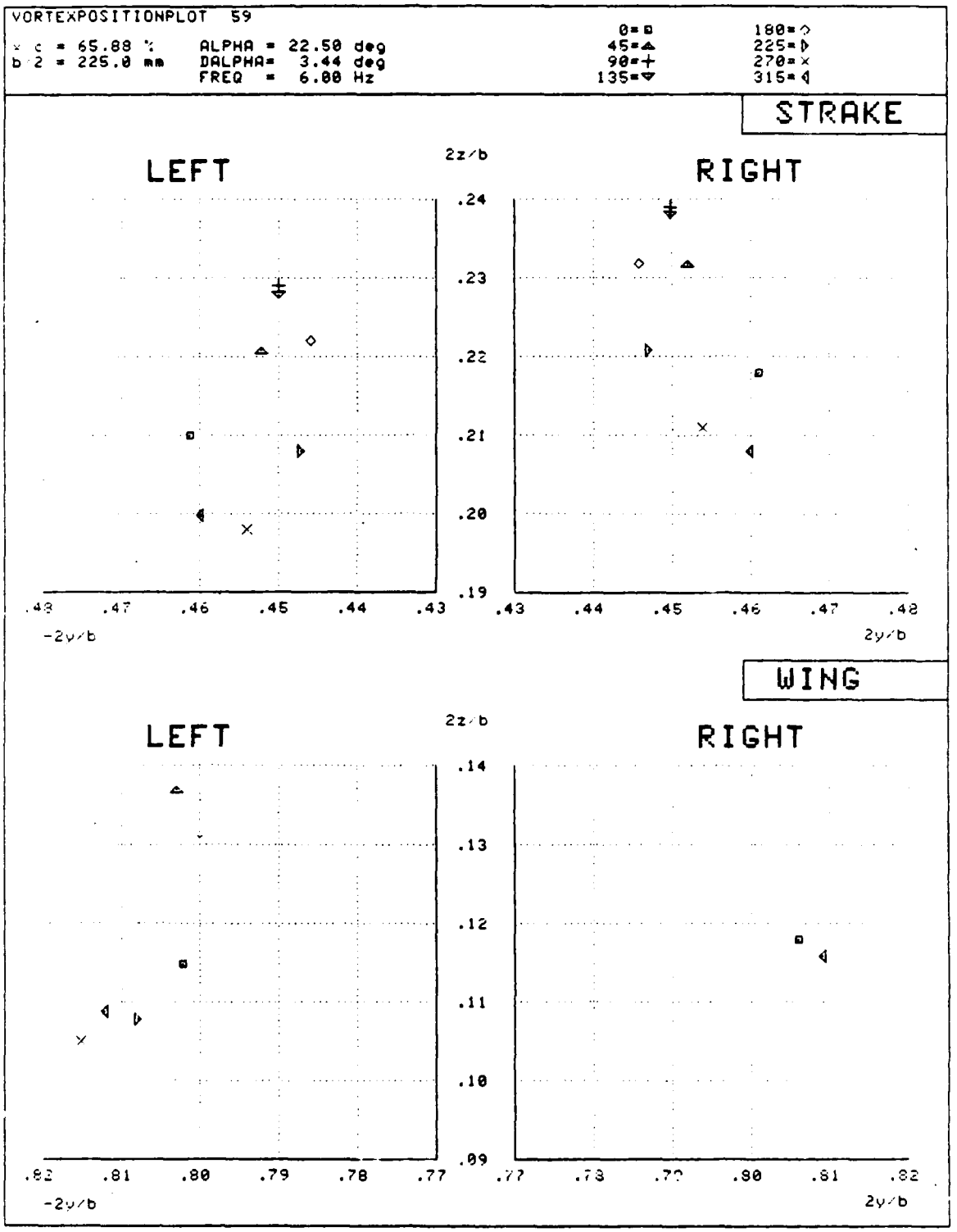

VORTEXPOSITIONPLOT 54
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 22.42 deg
DALPHA= 7.09 deg
FREQ = 1.88 Hz
0=
45=
90=+
135=
180=
225=
270=
315=
STRAKE
LEFT
RIGHT
2z/b
.28
.26
.24
.22
.20
.18
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.15
.13
.11
.09
.07
.05
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

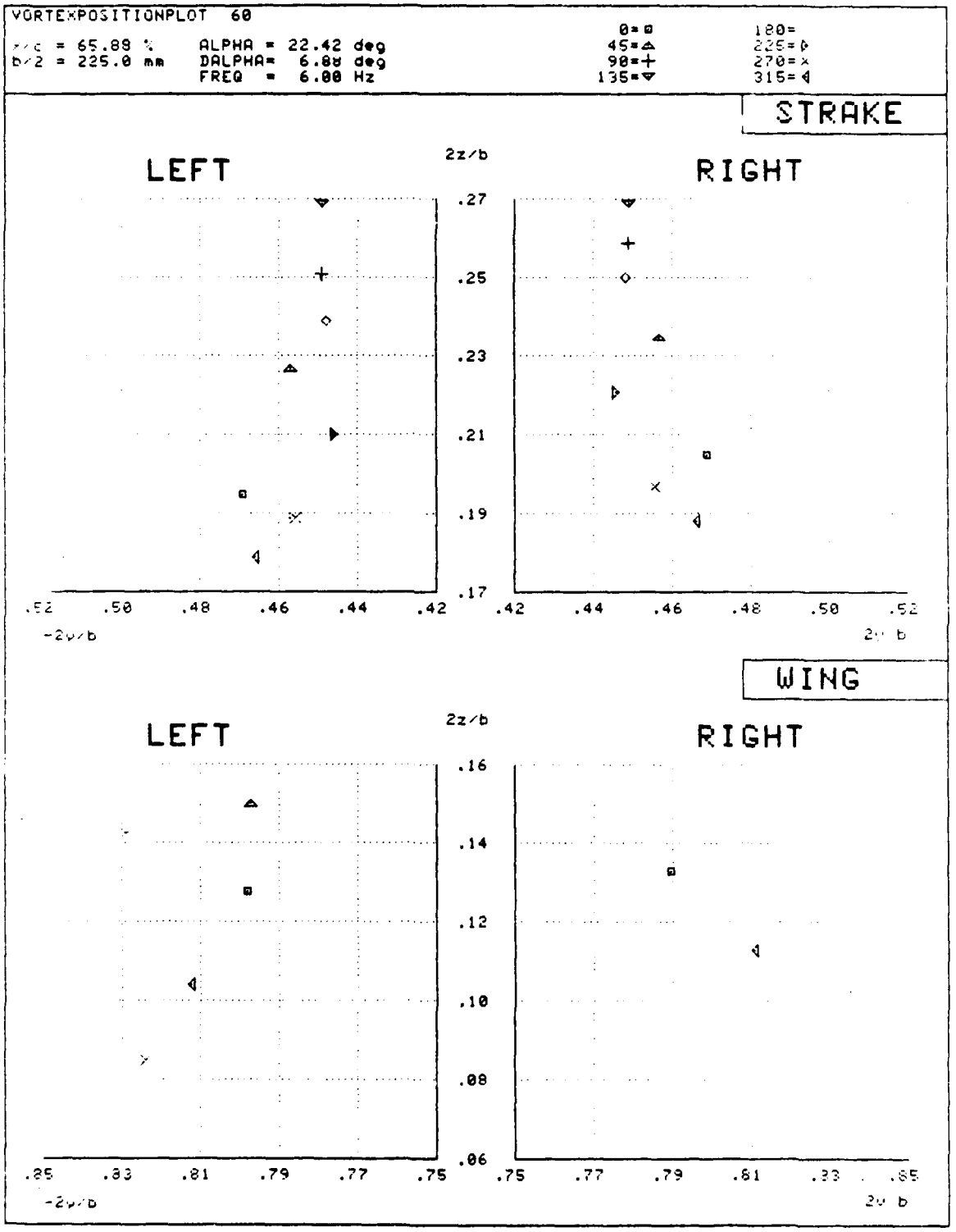

VORTEXPOSITIONPLOT 55
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 22.29 deg
DALPHA= 14.24 deg
FREQ = 1.88 Hz
0=
45=
90=+
135=
180=
225=
270=×
315=
STRAKE
LEFT
RIGHT
2z/b
.35
.30
.25
.20
.15
.10
.60 .55 .50 .45 .40 .35
.35 .40 .45 .50 .55 .60
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.25
.20
.15
.10
.05
0.00
.85 .80 .75 .70 .65 .60
.60 .65 .70 .75 .80 .85
-2y/b
2y/b

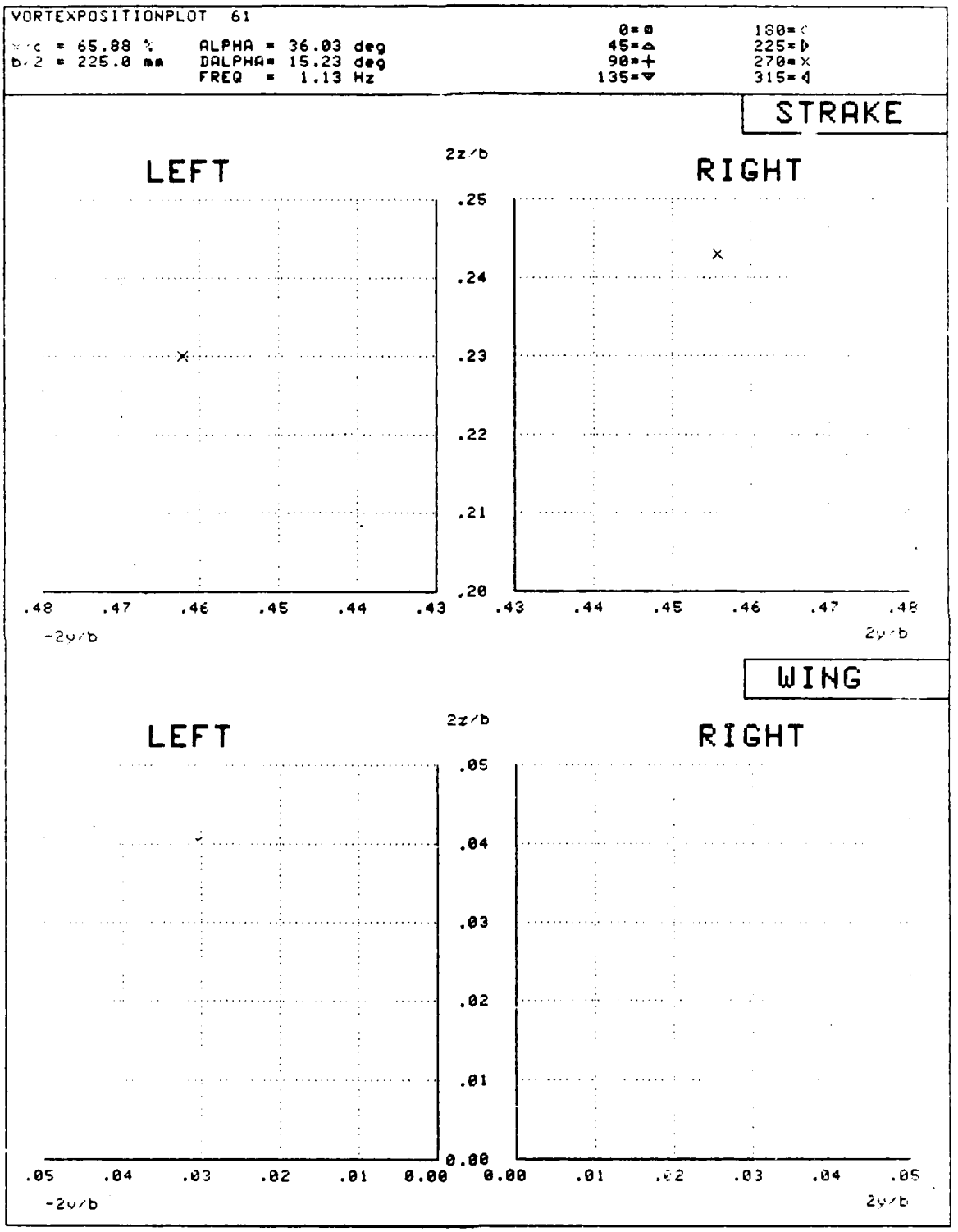

VORTEXPOSITIONPLOT 56
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 22.44 deg
DALPHA= 3.51 deg
FREQ = 3.00 Hz
0=□
45=△
90=+
135=▽
180=◇
225=▷
270=○
315=◁
STRAKE
LEFT
RIGHT
2z/b
.24
.23
.22
.21
.20
.19
.48 .47 .46 .45 .44 .43
.43 .44 .45 .46 .47 .48
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.14
.13
.12
.11
.10
.09
.82 .81 .80 .79 .78 .77
.77 .78 .79 .80 .81 .82
-2y/b
2y/b

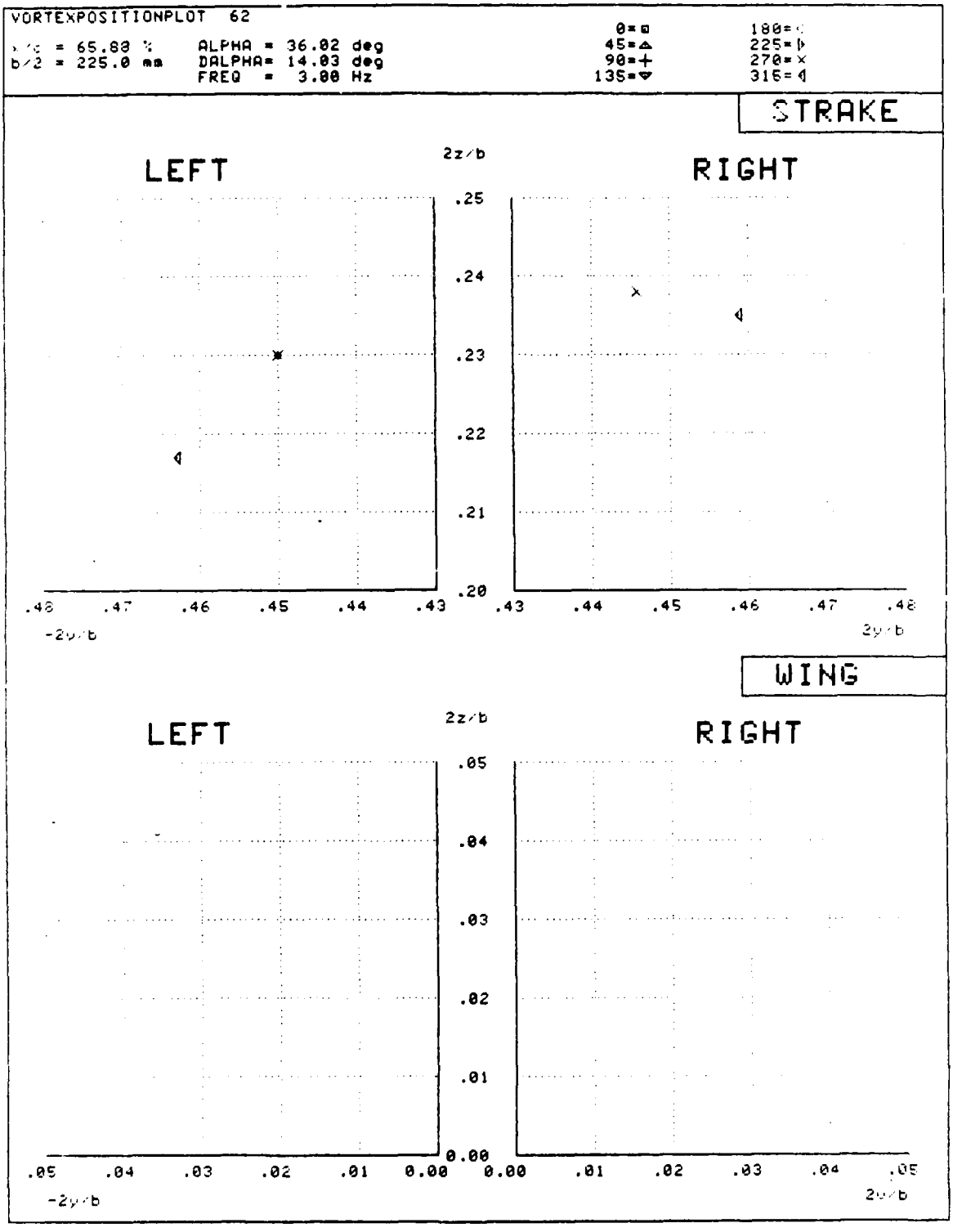

VORTEXPOSITIONPLOT 57
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 22.42 deg
DALPHA= 6.98 deg
FREQ = 3.00 Hz
0=
45=
90=+
135=
180=
225=
270=×
315=
STRAKE
LEFT
RIGHT
2z/b
.26
.24
.22
.20
.18
.16
.50 .48 .46 .44 .42 .40
.40 .42 .44 .46 .48 .50
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.16
.14
.12
.10
.08
.06
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85
-2y/b
2y/b

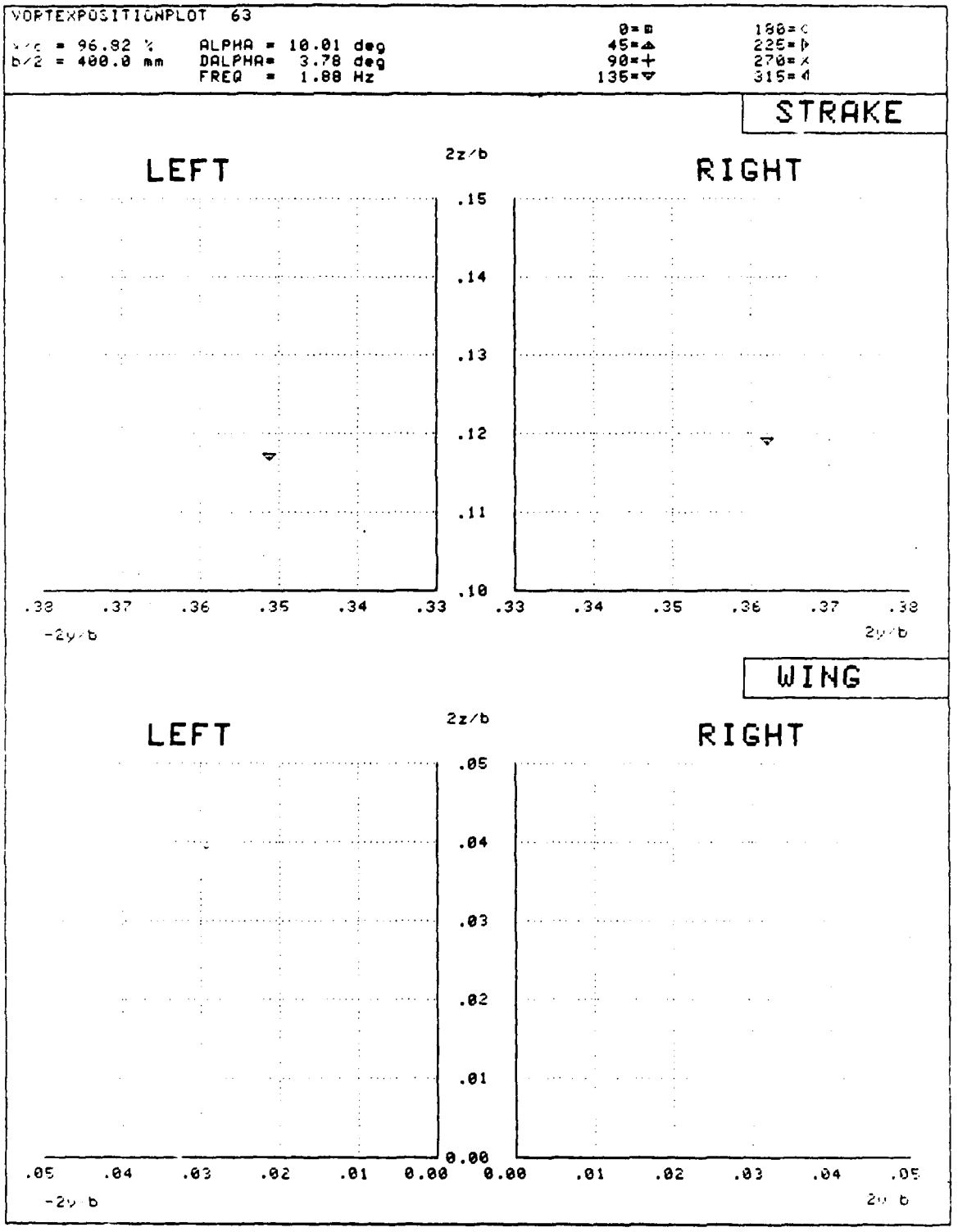

VORTEXPOSITIONPLOT 58
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 22.28 deg
DALPHA= 14.00 deg
FREQ = 3.00 Hz
0=□ 180=▷
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.35
.30
.25
.20
.15
.10
.60 .55 .50 .45 .40 .35
.35 .40 .45 .50 .55 .60
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.25
.20
.15
.10
.05
0.00
.85 .80 .75 .70 .65 .60
.60 .65 .70 .75 .80 .85
-2y/b
2y/b

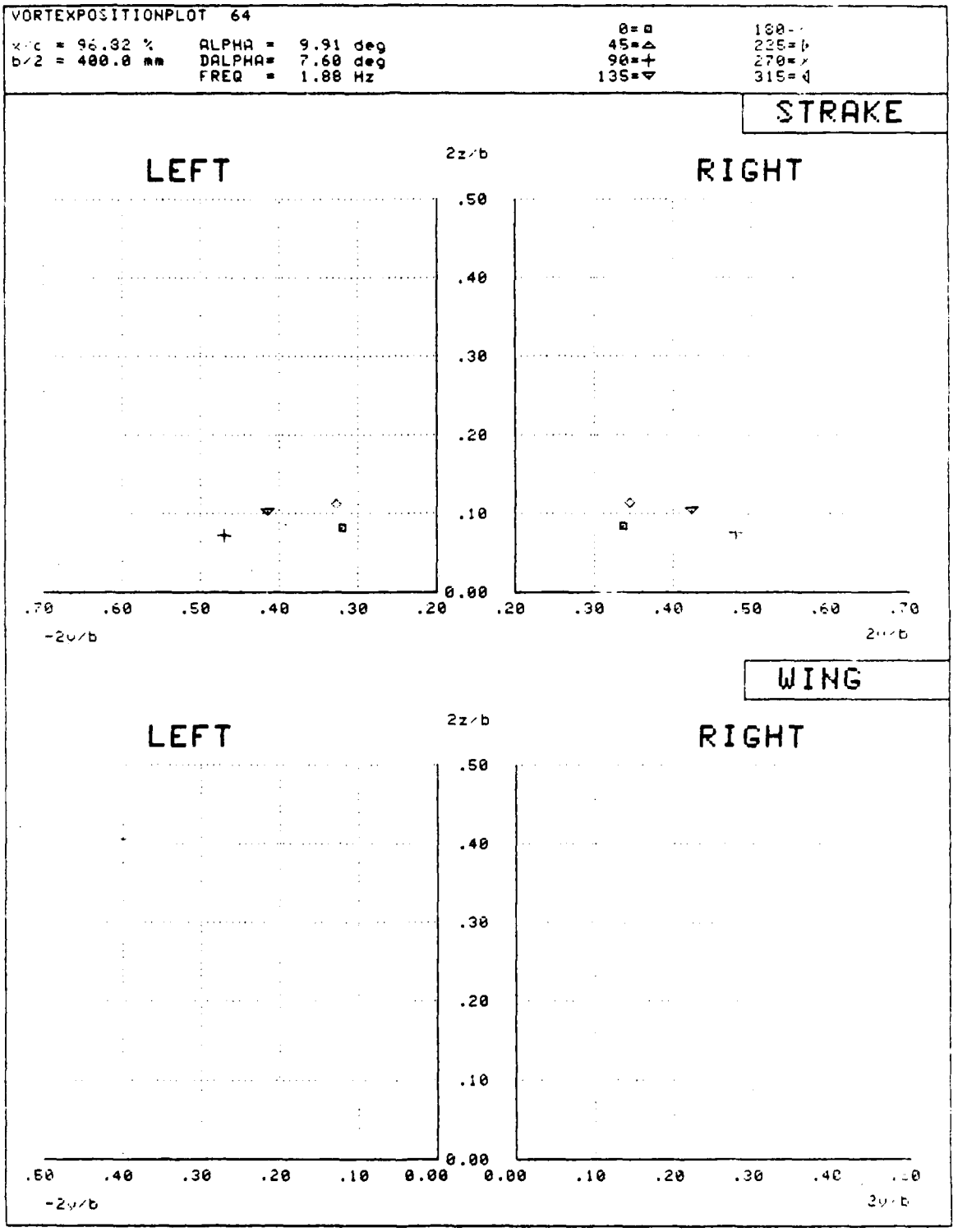

VORTEXPOSITIONPLOT 59
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 22.50 deg
DALPHA= 3.44 deg
FREQ = 6.00 Hz
0=□ 180=◇
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.24
.23
.22
.21
.20
.19
.48 .47 .46 .45 .44 .43
.43 .44 .45 .46 .47 .48
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.14
.13
.12
.11
.10
.09
.82 .81 .80 .79 .78 .77
.77 .78 .79 .80 .81 .82
-2y/b
2y/b

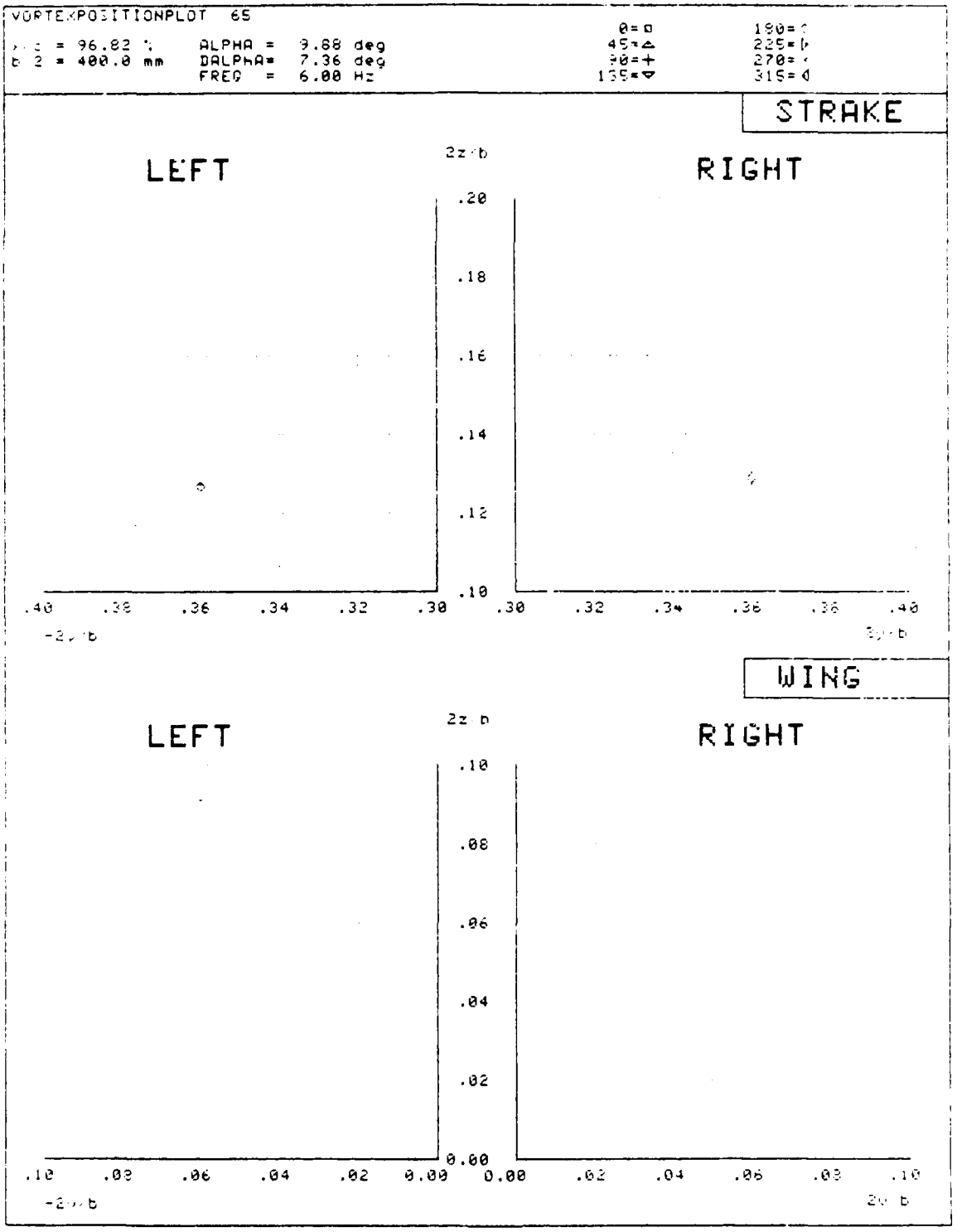

VORTEXPOSITIONPLOT 60
x/c = 65.89 %
b/2 = 225.0 mm
ALPHA = 22.42 deg
DALPHA= 6.88 deg
FREQ = 6.00 Hz
0=
45=
90=+
135=
180=
225=
270=x
315=
STRAKE
LEFT
RIGHT
2z/b
.27
.25
.23
.21
.19
.17
.52 .50 .48 .46 .44 .42
.42 .44 .46 .48 .50 .52
WING
LEFT
RIGHT
2z/b
.16
.14
.12
.10
.08
.06
.85 .83 .81 .79 .77 .75
.75 .77 .79 .81 .83 .85


VORTEXPOSITIONPLOT 61
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 36.03 deg
DALPHA= 15.23 deg
FREQ = 1.13 Hz
0=□ 180=◁
45=△ 225=▷
90=+ 270=×
135=▽ 315=◁
STRAKE
LEFT
RIGHT
2z/b
.25
.24
.23
.22
.21
.20
.48 .47 .46 .45 .44 .43
.43 .44 .45 .46 .47 .48
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b


VORTEXPOSITIONPLOT 62
x/c = 65.88 %
b/2 = 225.0 mm
ALPHA = 36.02 deg
DALPHA= 14.03 deg
FREQ = 3.00 Hz
0=□
45=△
90=+
135=▽
180=◁
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.25
.24
.23
.22
.21
.20
.48 .47 .46 .45 .44 .43
.43 .44 .45 .46 .47 .48
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b


VORTEXPOSITIONPLOT 63
x/c = 96.82 %
b/2 = 400.0 mm
ALPHA = 10.01 deg
DALPHA= 3.78 deg
FREQ = 1.88 Hz
0=□
45=△
90=+
135=▽
180=○
225=▷
270=×
315=◁
STRAKE
LEFT
RIGHT
2z/b
.15
.14
.13
.12
.11
.10
.38 .37 .36 .35 .34 .33
.33 .34 .35 .36 .37 .38
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.05
.04
.03
.02
.01
0.00
.05 .04 .03 .02 .01 0.00
0.00 .01 .02 .03 .04 .05
-2y/b
2y/b


VORTEXPOSITIONPLOT 64
x/c = 96.32 %
b/2 = 400.0 mm
ALPHA = 9.91 deg
DALPHA= 7.60 deg
FREQ = 1.88 Hz
0=□
45=△
90=+
135=▽
180-
225=
270=
315=
STRAKE
LEFT
RIGHT
2z/b
.50
.40
.30
.20
.10
0.00
.70
.60
.50
.40
.30
.20
-2y/b
2y/b
WING
LEFT
RIGHT
2z/b
.50
.40
.30
.20
.10
0.00
.60
.40
.30
.20
.10
0.00
-2y/b
2y/b



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